# Regulation of Nuclear receptor genes in HMSC cells treated with Metadichol

**Calculations**

**Determination of relative fold expression of target gene by the Comparative CT Method (ΔΔ CT Method)**

Relative expression of target gene in relation to housekeeping gene (β-actin) and untreated control cells were determined by the comparative CT method.

**Delta CT for each treatment was calculated using the formula.**

Delta Ct = Ct (target gene) – Ct (reference gene)

To compare the individual sample from treatment with untreated control delta CT of sample was subtracted from control to get a delta delta CT.

Deltadelta Ct = delta Ct (treatment group) – delta Ct (control group)

Fold change in target gene expression for each treatment was calculated using the formula.

Fold change = 2^ (-deltadelta Ct)

**Primer Details:**

| Primer | Nucleotide | Base pair |
|---|---|---|
| **NR1B2** | CCCCAGAACAAGACACCATG | 160 |
| | GCACTGAGAAGGCCTGTTTC | |
| **NR1C2/PPARD** | CCTTCTCAAGTATGGCGTGC | 226 |
| | GATGGCCGCAATGAATAGGG | |
| **NR1D1/Rev-Erbα** | GCTGGTGAAGACATGACGAC | 168 |
| | GAAGTAGGTGGGACAGCCTTG | |
| **NR1F3** | CGTTTTGAGGAACACAGGCA | 209 |
| | GAGAAGATGTTGGAGCGCTG | |
| **NR2B2/RXRB** | GCAGGAGTAGGAGCCATCTT | 188 |
| | GCATACACTTTCTCCCGCAG | |
| **NR2C2** | TCACCACCTCAGACAACCTC | 164 |
| | ACTGACAGCCCCATAGTGAC | |
| **NR2E3** | GGAGTCCAACACTGAGTCCC | 289 |
| | GGCCATGAAGAGTAGGCGAG | |
| **NR1D2** | AGTTCTTCCAGCTCAGCCTC | 226 |
| | TTGTCATCCCAGGTGCACTC | |
| **NR1F2/ROR beta** | CTCACTTCTCCACCTGCTCA | 212 |
| | GGAGTTGGTGGCTGGGATAT | |
| **NR1I1/VDR** | CTCTGTTGTGTCCTGTTGCC | 155 |

| | | |
|---|---|---|
| | CTTCTCCCTTTGCGTGTTCC | |
| **NR2B1/RXR alpha** | CTCTGTTGTGTCCTGTTGCC | 155 |
| | CTTCTCCCTTTGCGTGTTCC | |
| **NR2F6** | GGACTCTGGCTTCTCTCCTC | 187 |
| | TAGGGGTGCTGAGGAACAAG | |
| **NR3B1/EsRRA** | CAGGGGAGCATCGAGTACAG | 303 |
| | CTTCTCAGGCTCAACCACCA | |
| **NR5A2** | CTAGAAGCTGTAAGGGCCGA | 164 |
| | AGGTCAGAGGGCATAGCTTG | |
| **NR1B3** | AATTGACCCCTTCCTCCAGG | 166 |
| | GTAAACAGAGGGGAGGGGAC | |
| **NR1H3/LXR alpha** | GAGATCCTCCCGTGGCATTA | 151 |
| | GAGAACCCTGTGCAAAGTGG | |
| **NR2F1** | CATTTTTGGGCGATCTCCAGG | 261 |
| | GCCTTCTTCTTTCGGGAGGT | |
| **NR2F2** | CTCAACTGCCACTCGTACCT | 253 |
| | TCAACACAAACAGCTCGCTC | |
| **NR3B3/ERR3** | CCAGCTGTTCGTCCTTCATC | 177 |
| | CCAGGATAGGAGCAGAAGGG | |
| **NR3C3** | AGGGAATAGAATGTGGTGGC | 173 |
| | ATTTTCCATTTGGTGAAGCCAT | |
| **NR1I3** | CAGCAAACACCTGTGCAACT | 189 |
| | TGCGAAGTGTGTGACCAGAG | |
| **NR6A1/SLC16A1** | GAGGAACAGGTGCCAGTACT | 175 |
| | GGCCTCTTCCTCAAACTCCT | |
| **NR4A1/NUR77** | GCCAATCTCCTCACTTCCCT | 202 |
| | CAGCAAAGCCAGGGATCTTC | |
| **NR1A1/THRA** | ACCTCCATCCCACCTATTCC | 242 |
| | CTCTTCAGGAGTGGGCTCTG | |
| **NR2C1** | CCCAAGGCAAGCAGTTCATT | 157 |
| | GCAGACAGATCAGGAGTGGT | |
| **NR1A2/THRB** | GCCTCCAATAGCTCCAGGAT | 201 |
| | CACCCAGTTCCAGGATTCCT | |
| **NR1C1/PPARalpha** | CTGTCTGCTCTGTGGACTCA | 247 |
| | AGAACTATCCTCGCCGATGG | |
| **NR1F1/RORA** | TCGAACCAGTAGAAACCGCT | 219 |
| | TTGGCCGAGATGTTGTAGGT | |
| **NR1H4** | AACAGAACAAGTGGCAGGTC | 201 |
| | AGAGTCTCAGCTGGCATACG | |
| **NR2A1/HNF4A** | CCCGAGAAAACAAACCCAGG | 217 |
| | CCCTCTCCCACACCATTCTT | |
| **NR2A2/HNF4G** | GGTTCCAAGTGCAGATCGGT | 300 |

| | | |
|---|---|---|
| | CCAGTGTTGACATGGGACCT | |
| **NR2E1** | CAAGTGGGCTAAGAGTGTGC | 158 |
| | CGTTCATGCCAGATACAGCC | |
| **NR4A2** | CCGGTGTCTAGTTGCCAGAT | 275 |
| | ACGCCGTAGTGTTGGCAG | |
| **NR0B1** | CAGAGGCCAGGGGGTAAAG | 137 |
| | TGCGCTTGATTTGTGCTCGT | |
| **NR3A2** | GAGTCTGGTCGTGTGAAGGA | 218 |
| | ACTTCTCTGTCTCCGCACAA | |
| **NR2E1** | CAAGTGGGCTAAGAGTGTGC | 158 |
| | CGTTCATGCCAGATACAGCC | |
| **NR3C1** | GCTGTAGTAGCCCTTTCTGTGT | 233 |
| | AGCCCTTCCCTTCCCAGATTA | |
| **NR3C2** | CTGCCTCGTTTCCCTTTTCC | 231 |
| | CCATGATCTGTGCGTTCCTG | |
| **NR3C4** | TTGCATGTACGCCCCACTTT | 261 |
| | AGTGCTCCGGACTTGTAGAGA | |
| **NR3B2** | AAGCAGGGATCAGAGCAACT | 218 |
| | TCACTCGCAGCAACACTAGA | |
| **NR1B1** | GTCTGCCTCCCTTCTGACTG | 235 |
| | GAACTGCTGCTCTGGGTCTC | |
| **NR5A1** | CGGACACTCGCCTACTAAGT | 220 |
| | ACAGAGAGGGGATCAACAGC | |
| **NR1H2R** | TCCCCAGCTTACACCTCAAG | 197 |
| | CCTCTCCATCTTGCACTCCA | |
| **NR3A1** | ACTCAACAGCGTGTCTCCG | 184 |
| | ACCCTGGCGTCGATTATCTG | |
| **NR1C3** | TTGCAGTGGGGATGTCTCAT | 208 |
| | TTTCCTGTCAAGATCGCCCT | |

**Results:**

## NR1C2 Gene:

**Raw Data:**

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1C2 | Unkn | Control | cDNA | 23.20 | 18.18 | 20.69 |
| SYBR | NR1C2 | Unkn | 1pg | cDNA | 20.55 | 17.36 | 18.95 |
| SYBR | NR1C2 | Unkn | 100pg | cDNA | 19.76 | 18.01 | 18.89 |
| SYBR | NR1C2 | Unkn | 1ng | cDNA | 19.15 | 18.47 | 18.81 |
| SYBR | NR1C2 | Unkn | 100ng | cDNA | 24.53 | 18.19 | 21.36 |
| SYBR | NR1C2 | NTC | NTC | NTC | N/A | N/A | N/A |

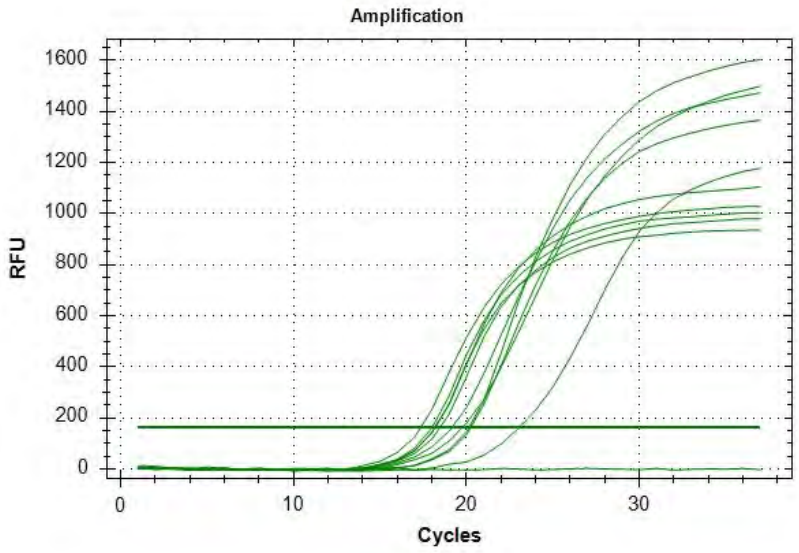



**Figure 1.1: NR1C2 Amplification curve**

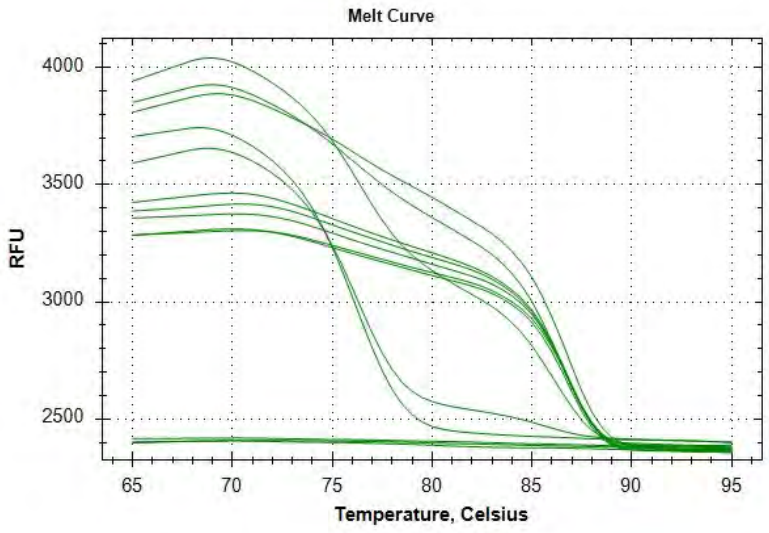


**Figure 1.2: NR1C2 melt curve**

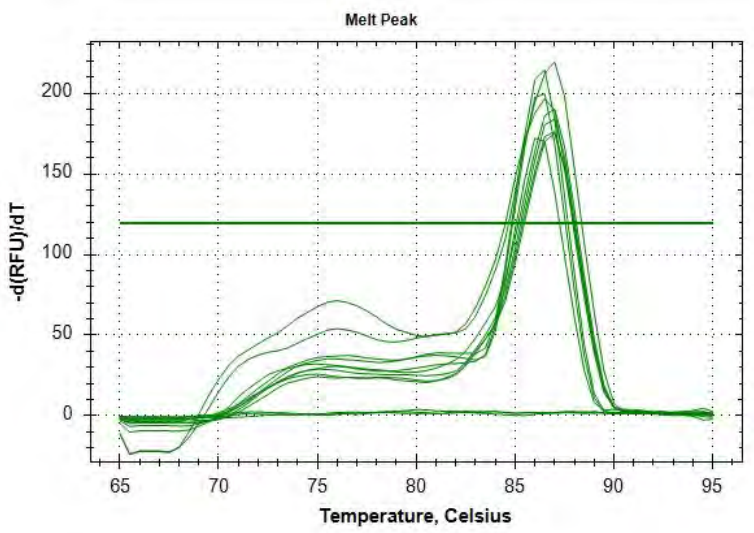
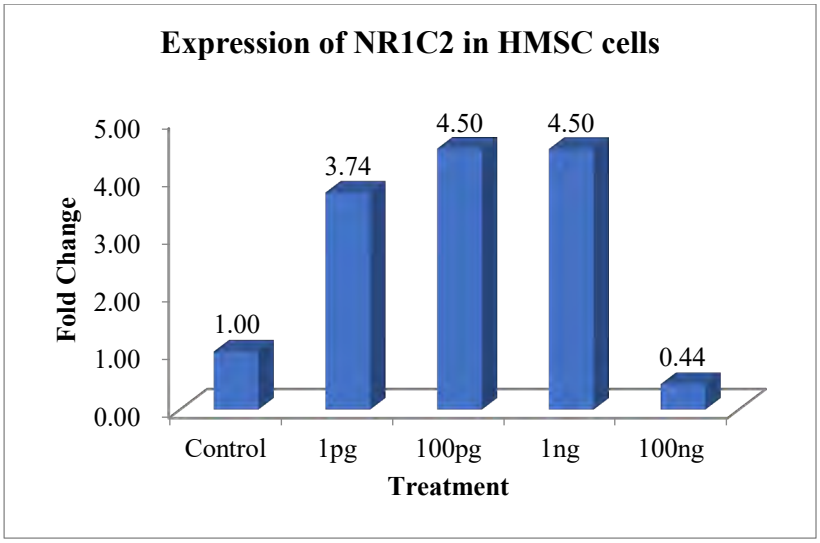



**Figure 1.3: NR1C2 melt peak**

**Table 1 and Graph 1 for Relative expression of NR1C2 gene:**

| Sample | Actin | NR1C2 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 20.69 | -0.06 | 0.00 | 1.00 |
| 1pg | 20.92 | 18.95 | -1.97 | -1.90 | 3.74 |
| 100pg | 21.12 | 18.89 | -2.23 | -2.17 | 4.50 |
| 1ng | 21.04 | 18.81 | -2.23 | -2.17 | 4.50 |
| 100ng | 20.23 | 21.36 | 1.13 | 1.19 | 0.44 |



## NR2B2 Gene:

**Raw Data:**

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR2B2 | Unkn | Control | cDNA | 19.72 | 19.29 | 19.50 |
| SYBR | NR2B2 | Unkn | 1pg | cDNA | 18.74 | 18.80 | 18.77 |
| SYBR | NR2B2 | Unkn | 100pg | cDNA | 19.93 | 19.46 | 19.70 |
| SYBR | NR2B2 | Unkn | 1ng | cDNA | 20.24 | 19.22 | 19.73 |
| SYBR | NR2B2 | Unkn | 100ng | cDNA | 19.86 | 19.16 | 19.51 |
| SYBR | NR2B2 | NTC | NTC | NTC | N/A | N/A | N/A |

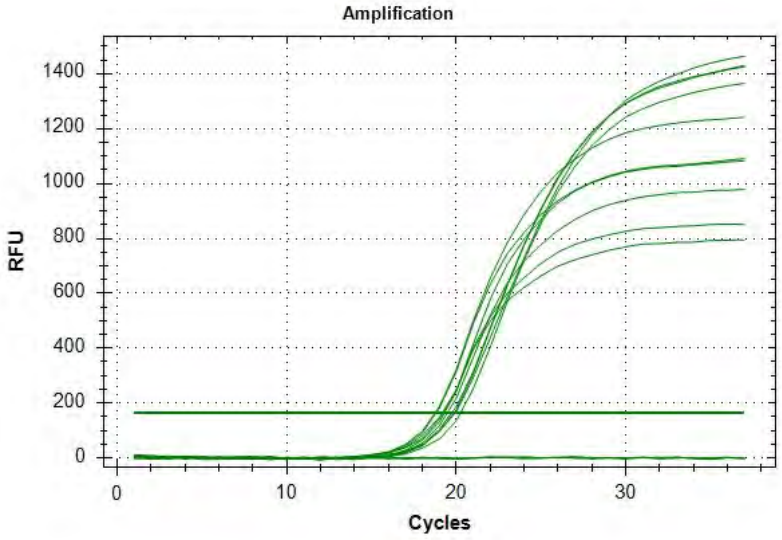



**Figure 2.1: NR2B2 Amplification curve**

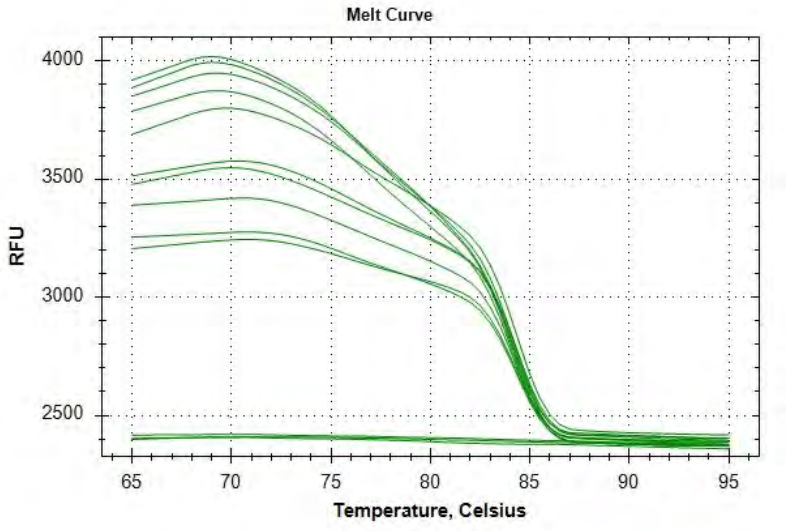



**Figure 2.2: NR2B2 melt curve**

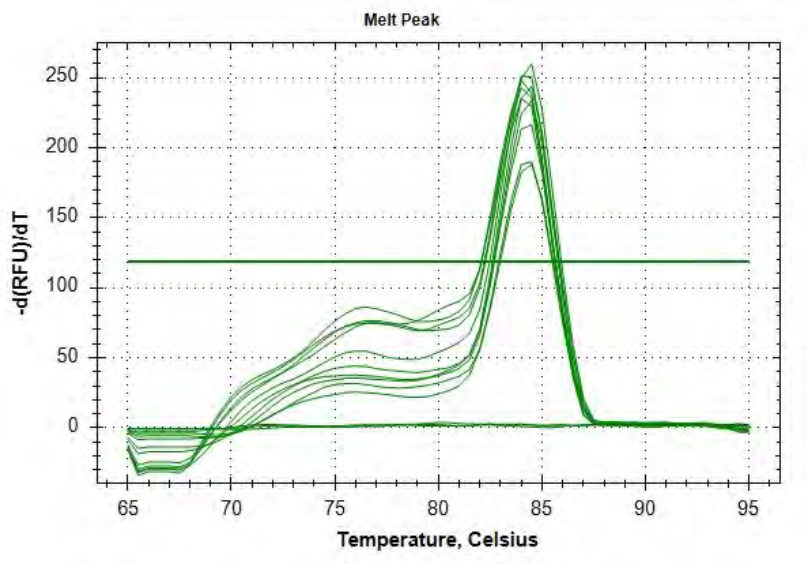
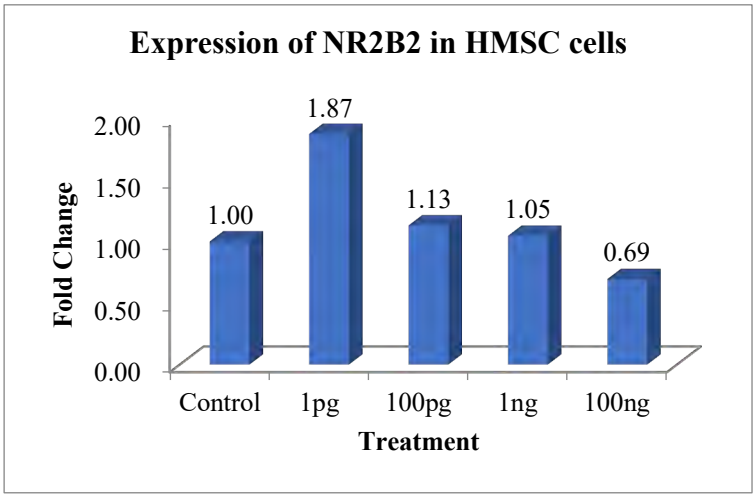



**Figure 2.3: NR2B2 melt peak**

**Table 2 and Graph 2 for Relative expression of NR2B2 gene:**

| Sample | Actin | NR2B2 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 19.50 | -1.25 | 0.00 | 1.00 |
| 1pg | 20.92 | 18.77 | -2.15 | -0.91 | 1.87 |
| 100pg | 21.12 | 19.70 | -1.42 | -0.18 | 1.13 |
| 1ng | 21.04 | 19.73 | -1.31 | -0.06 | 1.05 |
| 100ng | 20.23 | 19.51 | -0.72 | 0.53 | 0.69 |



## NR1C3 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1C3 | Unkn | Control | cDNA | 23.14 | 22.41 | 22.77 |
| SYBR | NR1C3 | Unkn | 1pg | cDNA | 22.26 | 21.90 | 22.08 |
| SYBR | NR1C3 | Unkn | 100pg | cDNA | 22.67 | 22.10 | 22.38 |
| SYBR | NR1C3 | Unkn | 1ng | cDNA | 23.38 | 22.67 | 23.03 |
| SYBR | NR1C3 | Unkn | 100ng | cDNA | 22.60 | 21.90 | 22.25 |
| SYBR | NR1C3 | NTC | NTC | NTC | N/A | N/A | N/A |

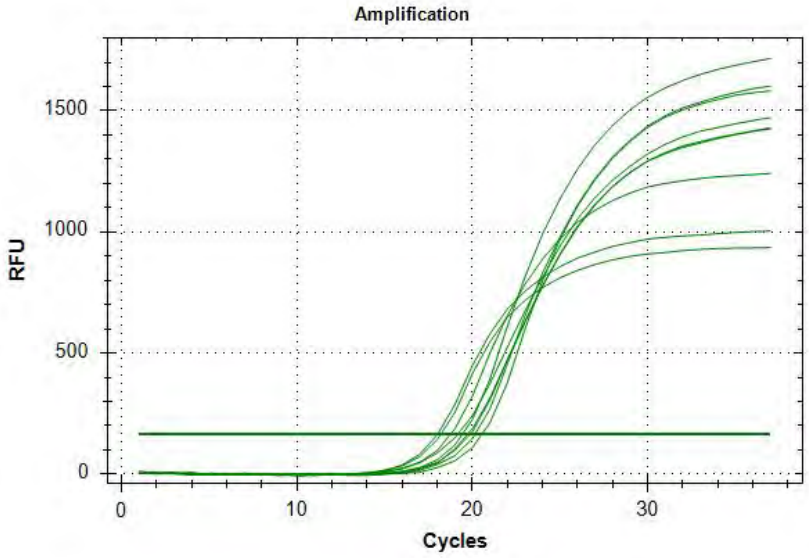



**Figure 3.1: NR1C3 Amplification curve**

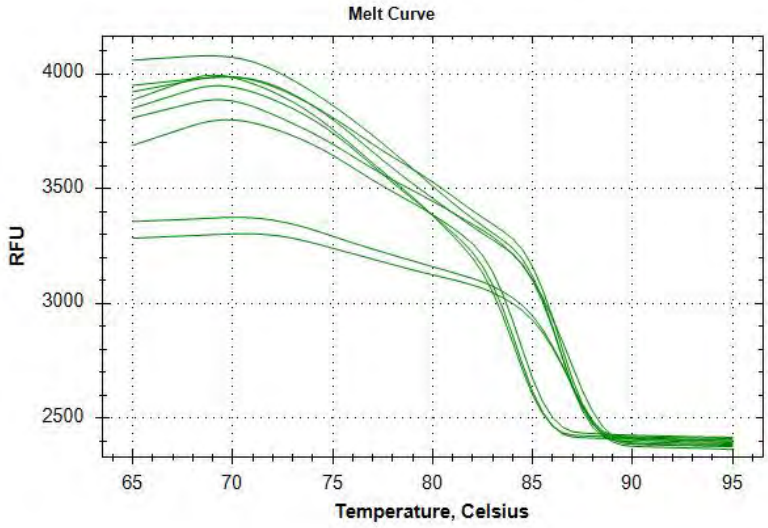



**Figure 3.2: NR1C3 melt curve**

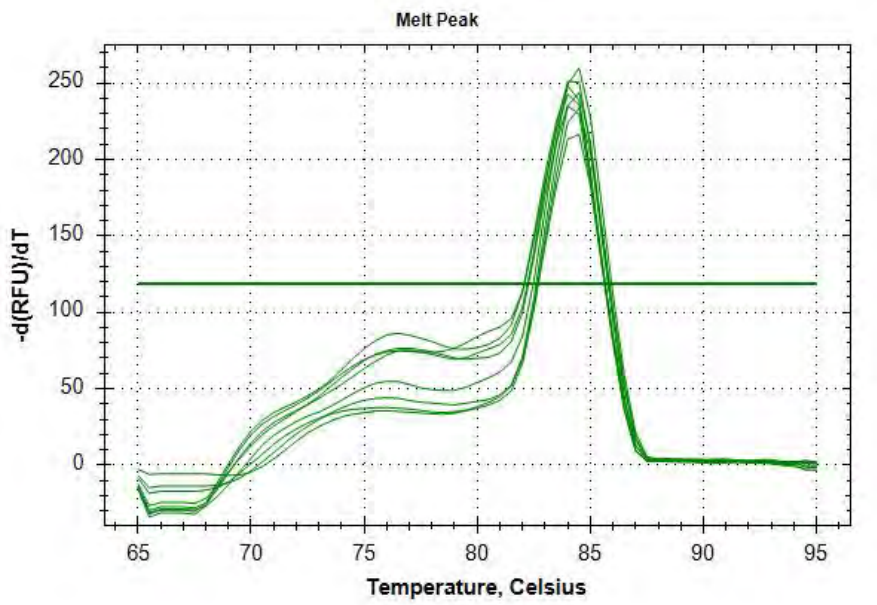
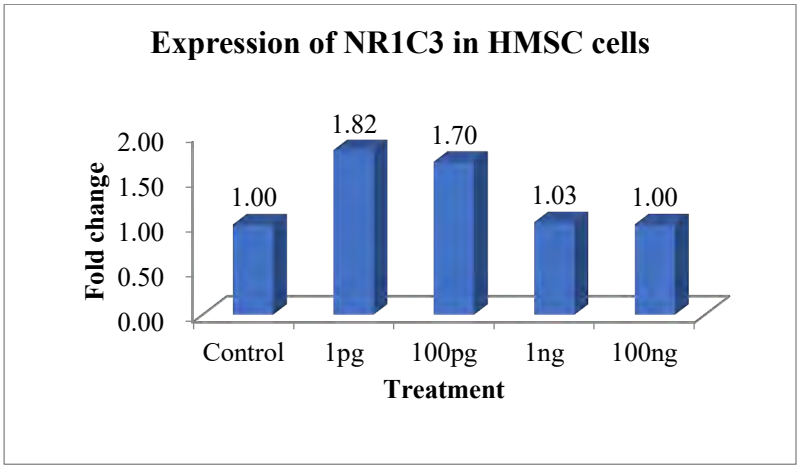



**Figure 3.3: NR1C3 melt peak**

**Table 3 and Graph 3 for relative expression of NR1C3 gene:**

| Sample | Actin | NR1C3 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 22.77 | 2.02 | 0.00 | 1.00 |
| 1pg | 20.92 | 22.08 | 1.16 | -0.87 | 1.82 |
| 100pg | 21.12 | 22.38 | 1.26 | -0.76 | 1.70 |
| 1ng | 21.04 | 23.03 | 1.99 | -0.04 | 1.03 |
| 100ng | 20.23 | 22.25 | 2.02 | -0.00 | 1.00 |



## NR2C2 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR2C2 | Unkn | Control | cDNA | 20.14 | 20.03 | 20.09 |
| SYBR | NR2C2 | Unkn | 1pg | cDNA | 19.42 | 19.75 | 19.58 |
| SYBR | NR2C2 | Unkn | 100pg | cDNA | 20.07 | 19.66 | 19.87 |
| SYBR | NR2C2 | Unkn | 1ng | cDNA | 20.80 | 20.84 | 20.82 |
| SYBR | NR2C2 | Unkn | 100ng | cDNA | 20.53 | 20.55 | 20.54 |
| SYBR | NR2C2 | NTC | NTC | NTC | N/A | N/A | N/A |

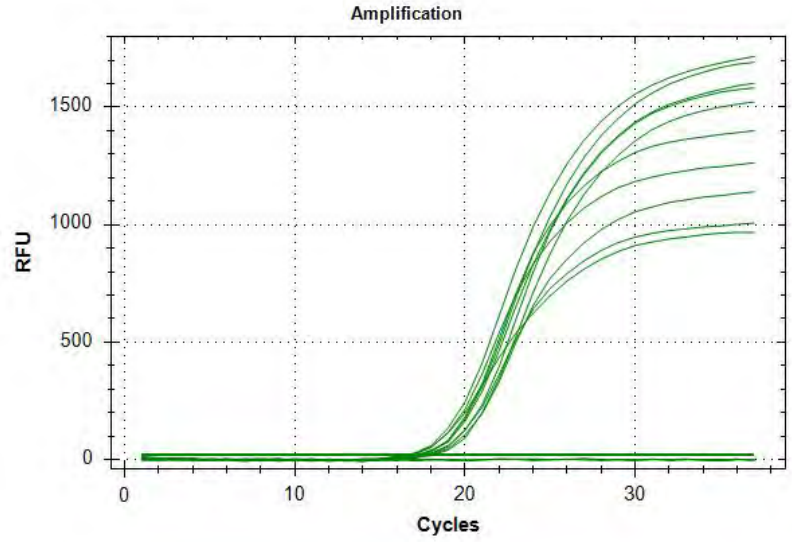



**Figure 4.1: NR2C2 Amplification curve**

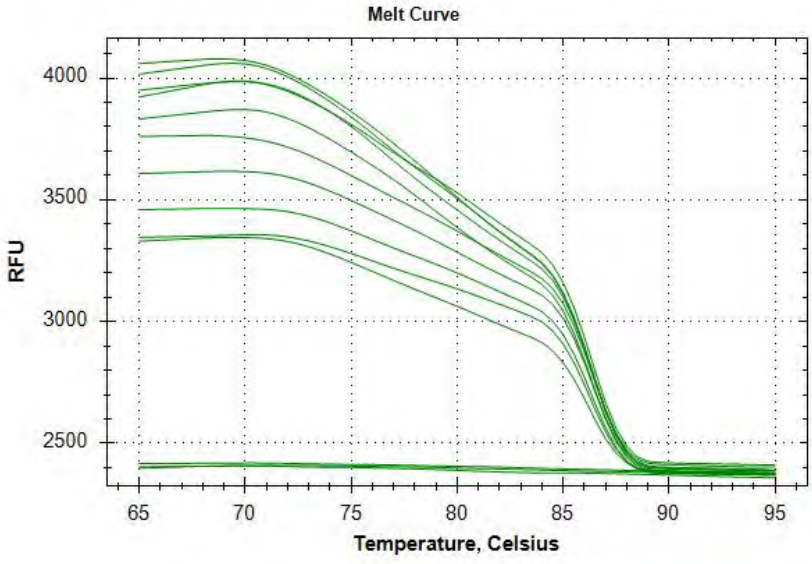



**Figure 4.2: NR2C2 melt curve**

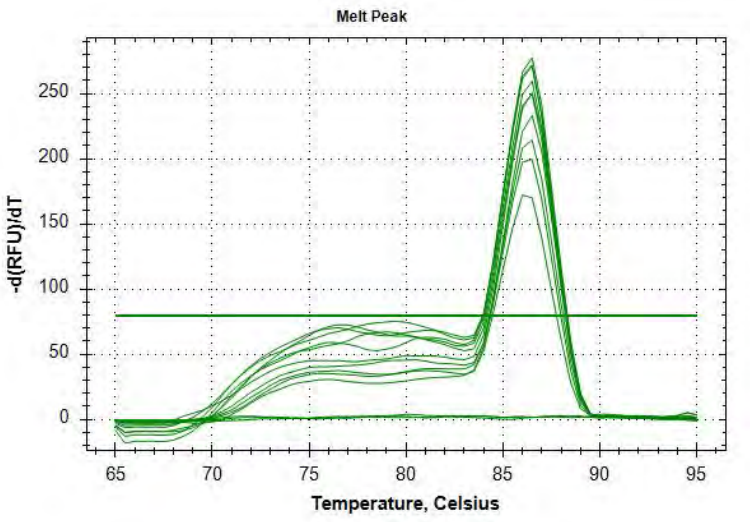
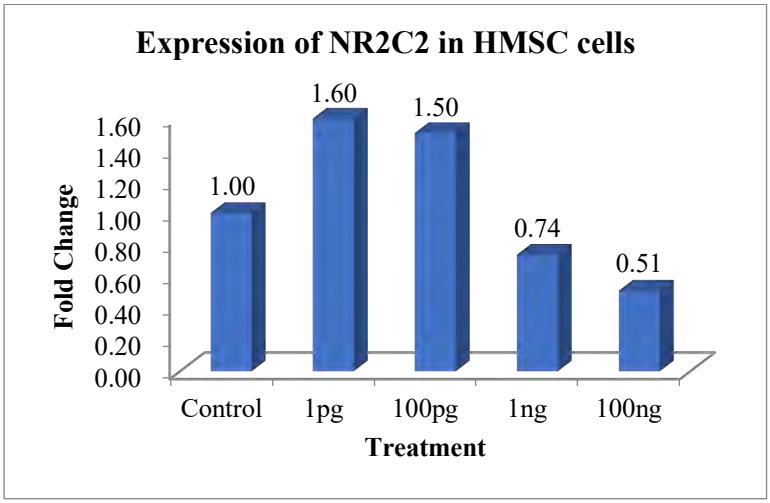



**Figure 4.3: NR2C2 melt peak**

**Table 4 and Graph 4 for relative expression of NR2C2 gene:**

| Sample | Actin | NR2C2 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 20.09 | -0.66 | 0.00 | 1.00 |
| 1pg | 20.92 | 19.58 | -1.34 | -0.67 | 1.60 |
| 100pg | 21.12 | 19.87 | -1.25 | -0.59 | 1.50 |
| 1ng | 21.04 | 20.82 | -0.22 | 0.44 | 0.74 |
| 100ng | 20.23 | 20.54 | 0.31 | 0.97 | 0.51 |



## NR1F1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1F1 | Unkn | Control | cDNA | 21.10 | 20.68 | 20.89 |
| SYBR | NR1F1 | Unkn | 1pg | cDNA | 20.31 | 20.16 | 20.23 |
| SYBR | NR1F1 | Unkn | 100pg | cDNA | 21.15 | 20.42 | 20.79 |
| SYBR | NR1F1 | Unkn | 1ng | cDNA | 21.39 | 21.15 | 21.27 |
| SYBR | NR1F1 | Unkn | 100ng | cDNA | 21.02 | 20.89 | 20.96 |
| SYBR | NR1F1 | NTC | NTC | NTC | N/A | N/A | N/A |

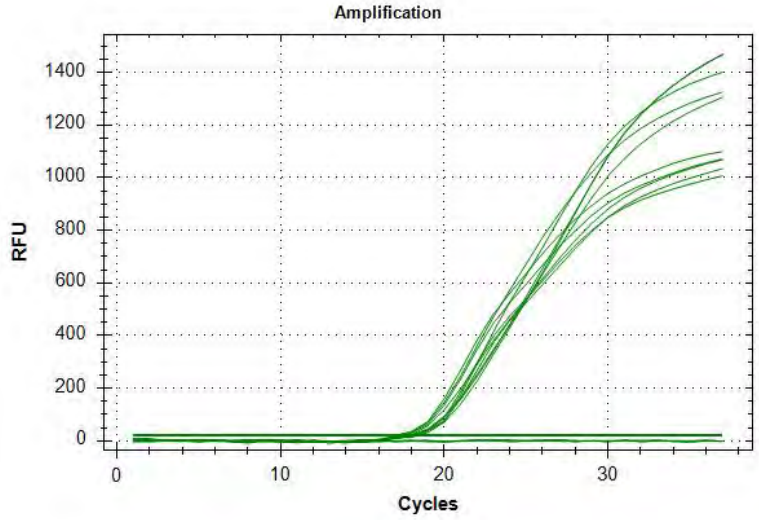



**Figure 5.1: NR1F1 Amplification curve**

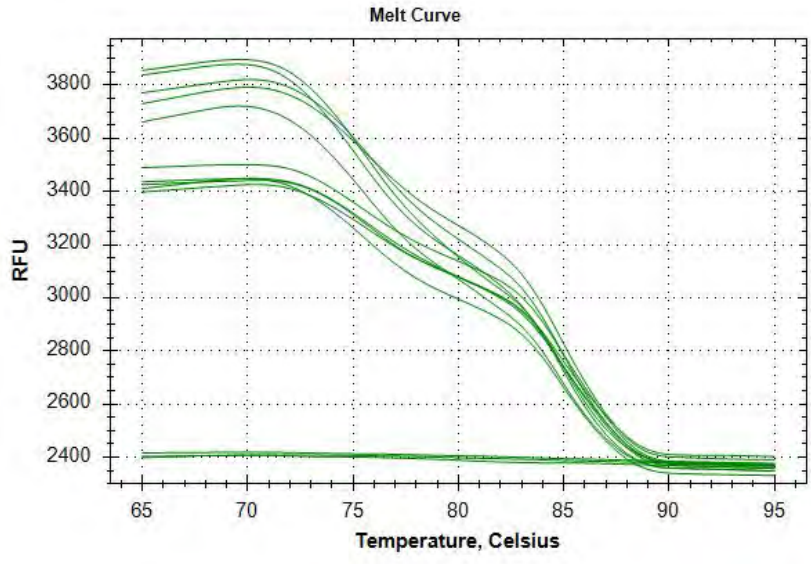



**Figure 5.2: NR1F1 melt curve**

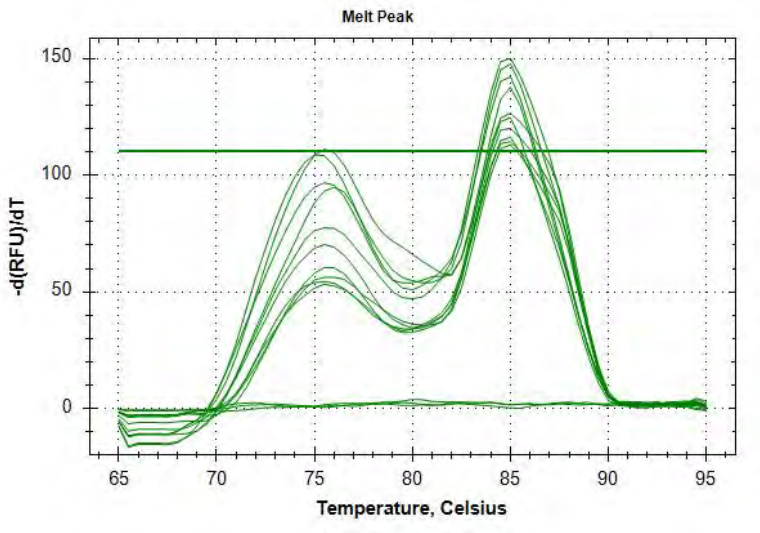
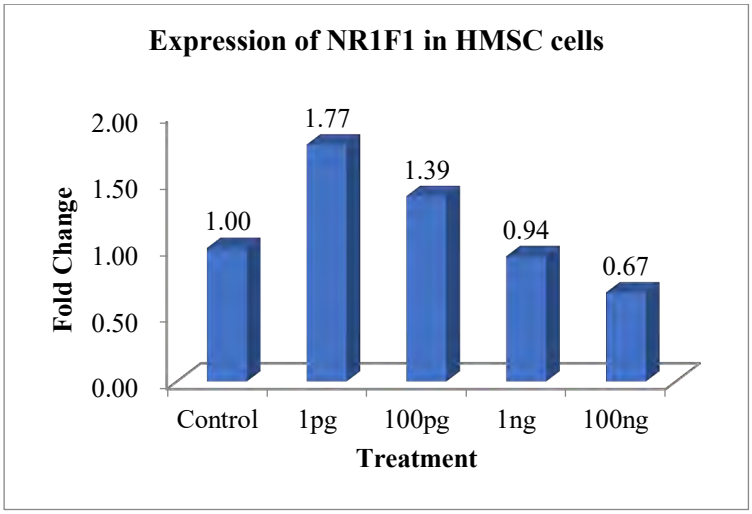



**Figure 5.3: NR1F1 melt peak**

**Table 5 and Graph 5 for relative expression of NR1F1 gene:**

| Sample | Actin | NR1F1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 20.89 | 0.14 | 0.00 | 1.00 |
| 1pg | 20.92 | 20.23 | -0.69 | -0.83 | 1.77 |
| 100pg | 21.12 | 20.79 | -0.33 | -0.47 | 1.39 |
| 1ng | 21.04 | 21.27 | 0.23 | 0.09 | 0.94 |
| 100ng | 20.23 | 20.96 | 0.73 | 0.59 | 0.67 |



## NR2E3 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR2E3 | Unkn | Control | cDNA | 24.21 | 25.87 | 25.04 |
| SYBR | NR2E3 | Unkn | 1pg | cDNA | 25.10 | 23.07 | 24.08 |
| SYBR | NR2E3 | Unkn | 100pg | cDNA | 26.34 | 23.88 | 25.11 |
| SYBR | NR2E3 | Unkn | 1ng | cDNA | 25.68 | 23.80 | 24.74 |
| SYBR | NR2E3 | Unkn | 100ng | cDNA | 26.65 | 21.74 | 24.20 |
| SYBR | NR2E3 | NTC | NTC | NTC | N/A | N/A | N/A |

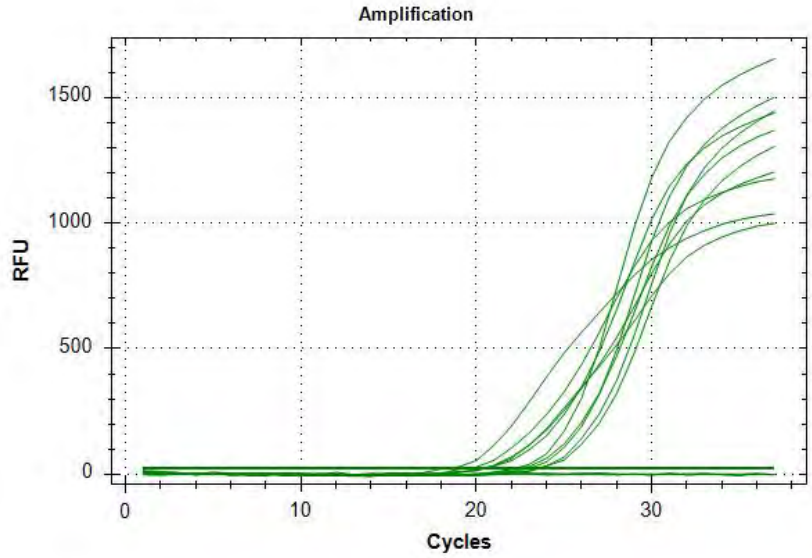



**Figure 6.1: NR2E3 Amplification curve**

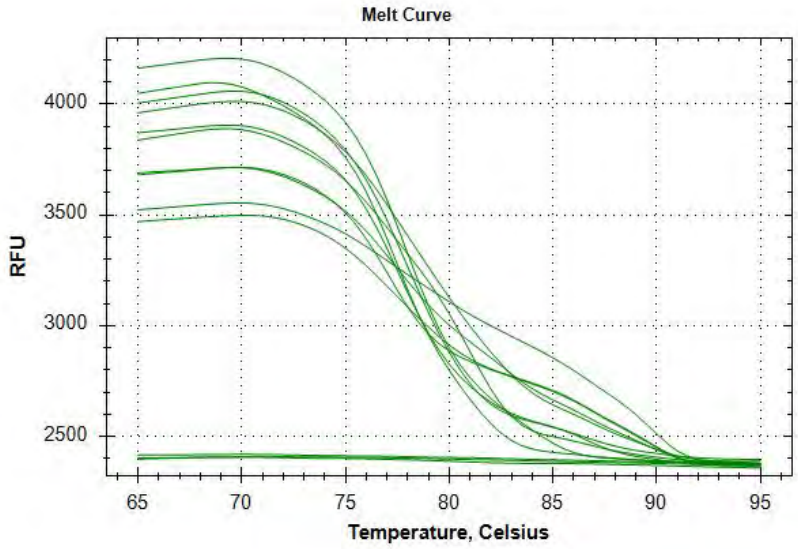



**Figure 6.2: NR2E3 melt curve**

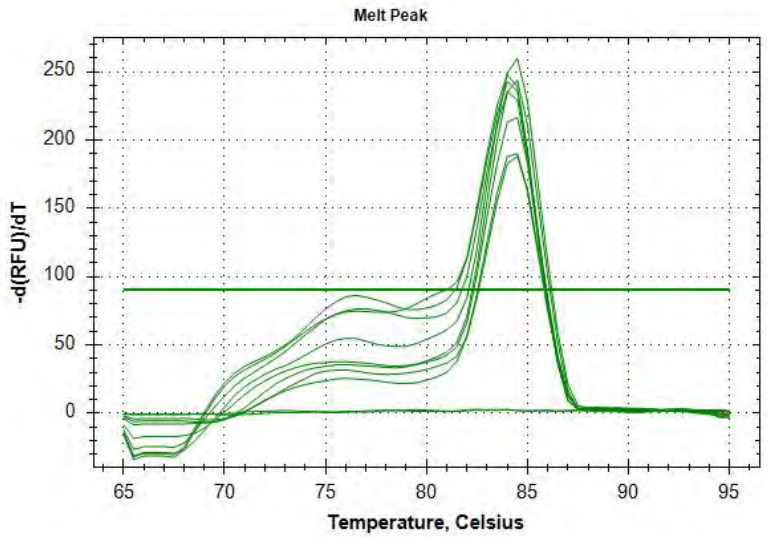
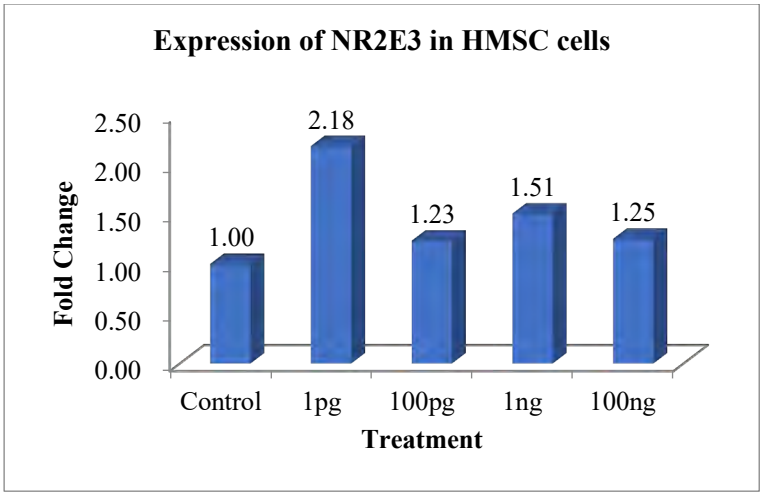



**Figure 6.3: NR2E3 melt peak**

**Table 6 and Graph 6 for relative expression of NR2E3 gene:**

| Sample | Actin | NR2E3 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 25.04 | 4.29 | 0.00 | 1.00 |
| 1pg | 20.92 | 24.08 | 3.16 | -1.13 | 2.18 |
| 100pg | 21.12 | 25.11 | 3.99 | -0.30 | 1.23 |
| 1ng | 21.04 | 24.74 | 3.70 | -0.59 | 1.51 |
| 100ng | 20.23 | 24.20 | 3.97 | -0.33 | 1.25 |



## NR1F3 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1F3 | Unkn | Control | cDNA | 25.52 | 28.28 | 26.90 |
| SYBR | NR1F3 | Unkn | 1pg | cDNA | 28.00 | 28.03 | 28.01 |
| SYBR | NR1F3 | Unkn | 100pg | cDNA | 28.31 | 27.10 | 27.70 |
| SYBR | NR1F3 | Unkn | 1ng | cDNA | 27.64 | 26.25 | 26.94 |
| SYBR | NR1F3 | Unkn | 100ng | cDNA | 28.15 | 24.39 | 26.27 |
| SYBR | NR1F3 | NTC | NTC | NTC | N/A | N/A | N/A |

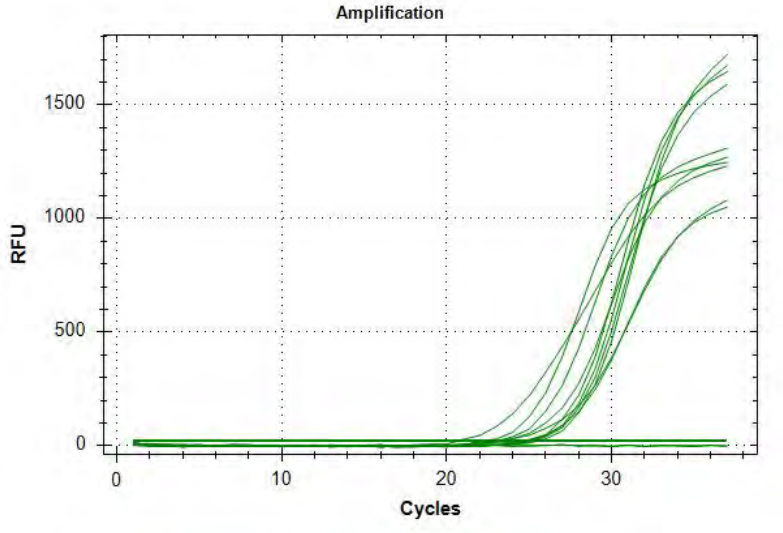



**Figure 7.1: NR1F3 Amplification curve**

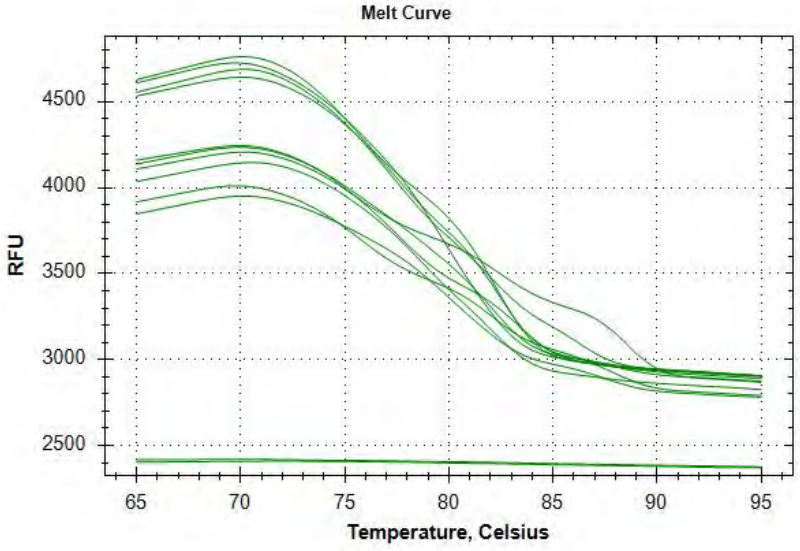



**Figure 7.2: NR1F3 melt curve**

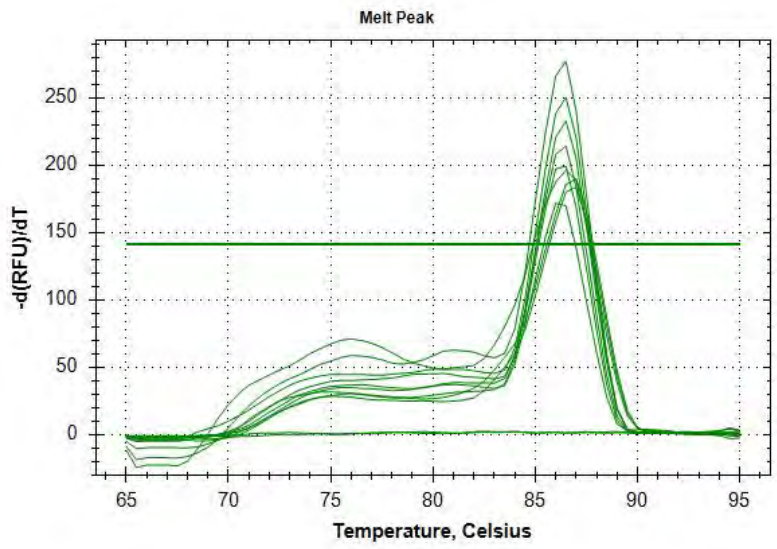
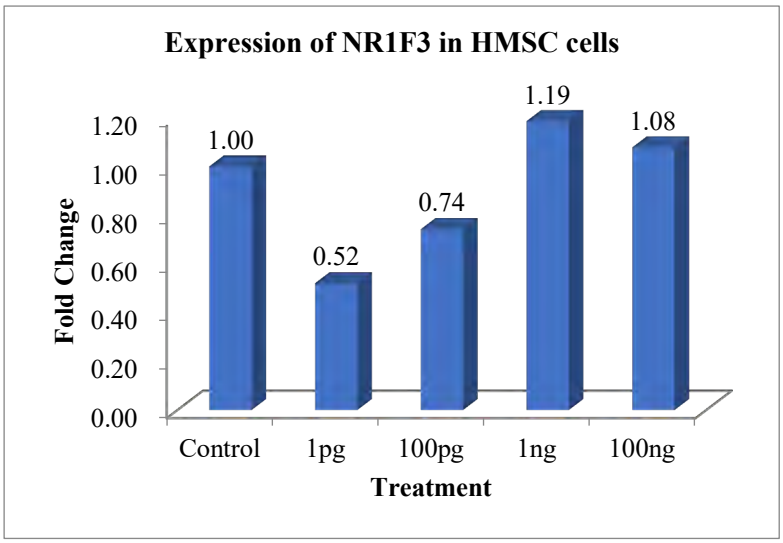



**Figure 7.3: NR1F3 melt peak**

**Table 7 and Graph 7 for relative expression of NR1F3 gene:**

| Sample | Actin | NR1F3 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 26.90 | 6.15 | 0.00 | 1.00 |
| 1pg | 20.92 | 28.01 | 7.09 | 0.94 | 0.52 |
| 100pg | 21.12 | 27.70 | 6.58 | 0.43 | 0.74 |
| 1ng | 21.04 | 26.94 | 5.90 | -0.25 | 1.19 |
| 100ng | 20.23 | 26.27 | 6.04 | -0.11 | 1.08 |



## NR1H4 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1H4 | Unkn | Control | c DNA | 20.87 | 20.62 | 20.75 |
| SYBR | NR1H4 | Unkn | 1pg | c DNA | 20.00 | 19.86 | 19.93 |
| SYBR | NR1H4 | Unkn | 100pg | c DNA | 20.87 | 21.11 | 20.99 |
| SYBR | NR1H4 | Unkn | 1ng | c DNA | 22.06 | 21.84 | 21.95 |
| SYBR | NR1H4 | Unkn | 100ng | c DNA | 20.88 | 21.05 | 20.97 |
| SYBR | NR1H4 | NTC | NTC | NTC | N/A | N/A | N/A |

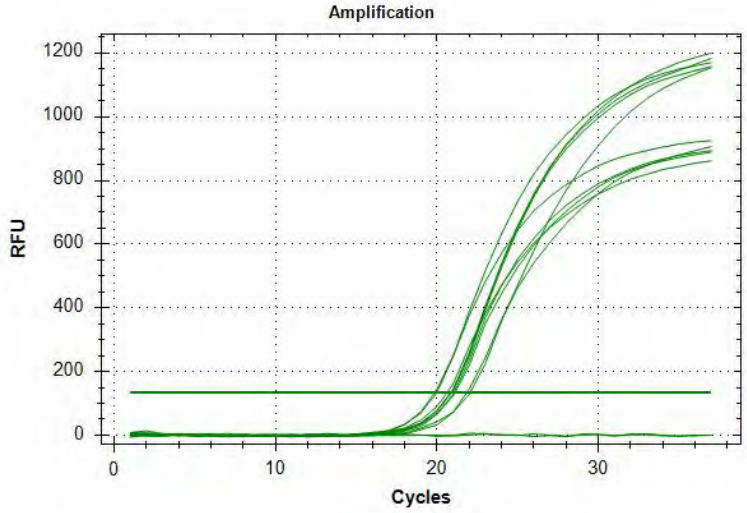



**Figure 8.1: NR1H4 Amplification curve**

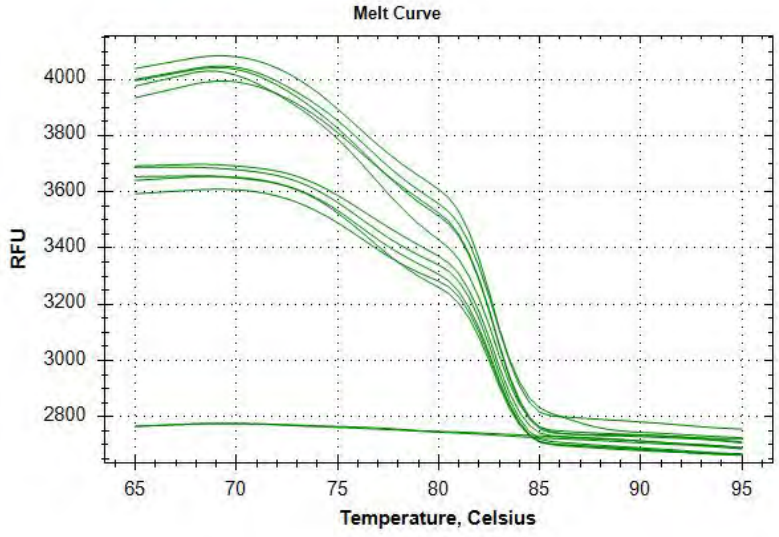



**Figure 8.2: NR1H4 melt curve**

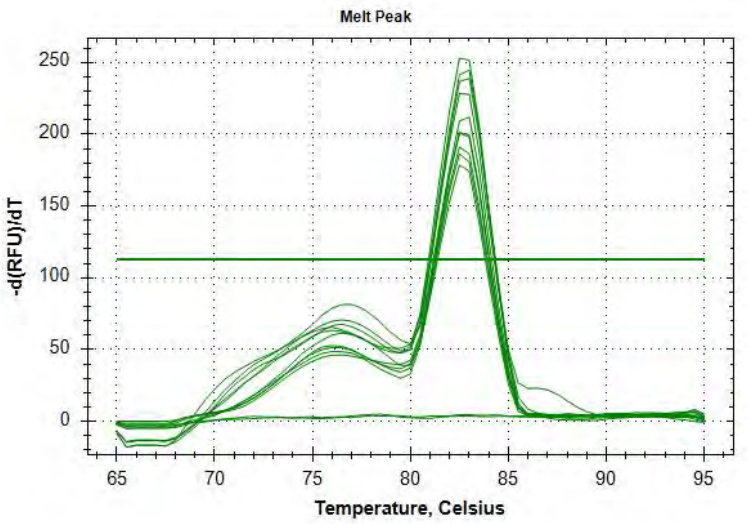
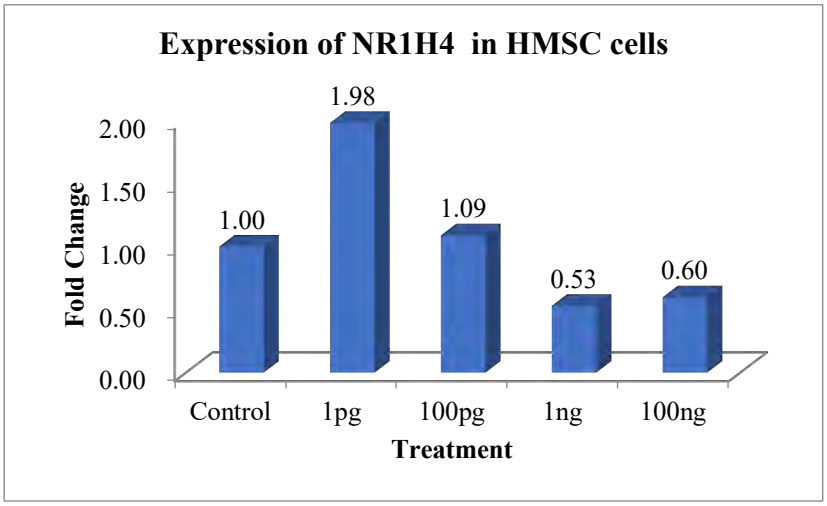



**Figure 8.3: NR1H4 melt peak**

**Table 8 and Graph 8 for relative expression of NR1H4 gene:**

| Sample | Actin | NR1H4 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 20.75 | -0.00 | 0.00 | 1.00 |
| 1pg | 20.92 | 19.93 | -0.99 | -0.99 | 1.98 |
| 100pg | 21.12 | 20.99 | -0.13 | -0.12 | 1.09 |
| 1ng | 21.04 | 21.95 | 0.91 | 0.91 | 0.53 |
| 100ng | 20.23 | 20.97 | 0.74 | 0.74 | 0.60 |



## NR2C1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR2C1 | Unkn | Control | c DNA | 17.60 | 17.61 | 17.61 |
| SYBR | NR2C1 | Unkn | 1pg | c DNA | 17.34 | 17.46 | 17.40 |
| SYBR | NR2C1 | Unkn | 100pg | c DNA | 17.63 | 17.65 | 17.64 |
| SYBR | NR2C1 | Unkn | 1ng | c DNA | 18.28 | 18.39 | 18.33 |
| SYBR | NR2C1 | Unkn | 100ng | c DNA | 18.26 | 18.63 | 18.45 |
| SYBR | NR2C1 | NTC | NTC | NTC | N/A | N/A | N/A |

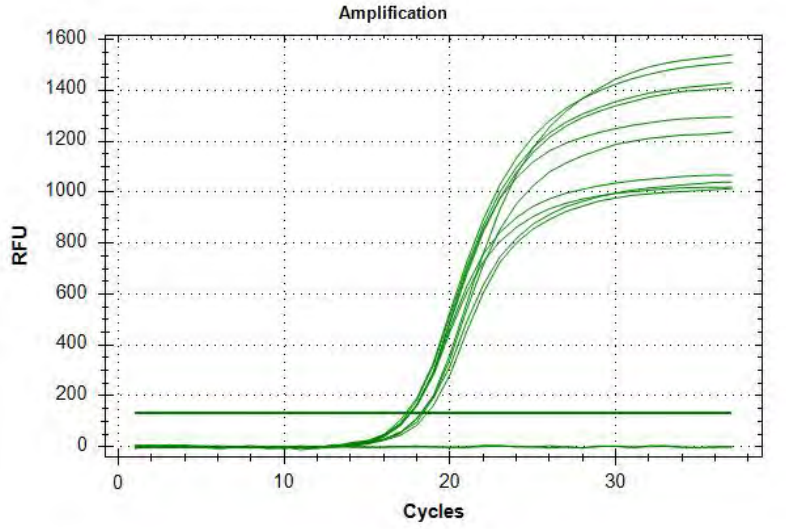



**Figure 9.1: NR2C1 Amplification curve**

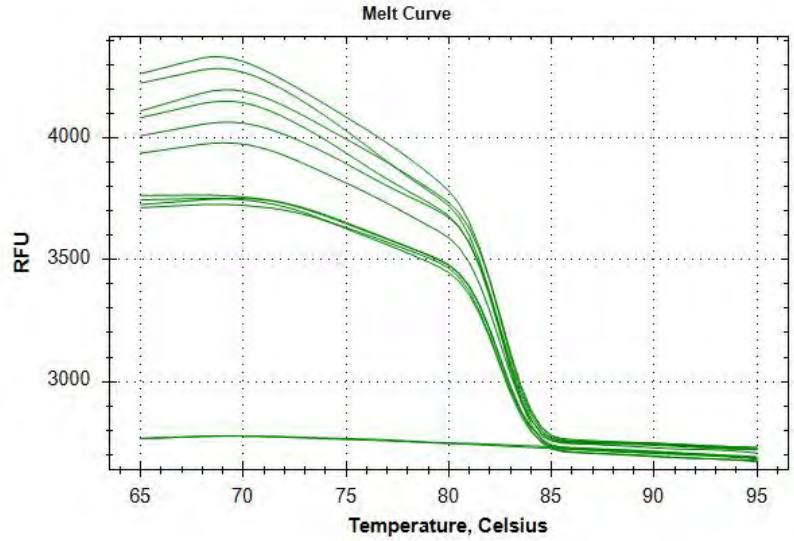



**Figure 9.2: NR2C1 melt curve**

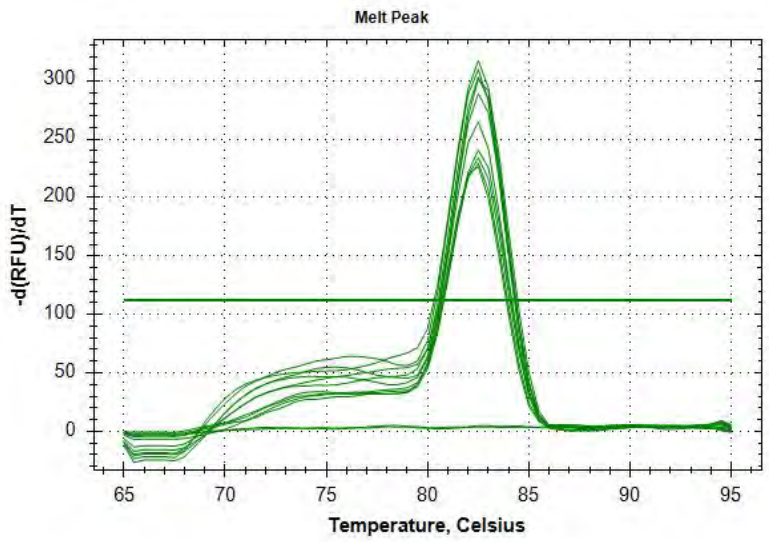
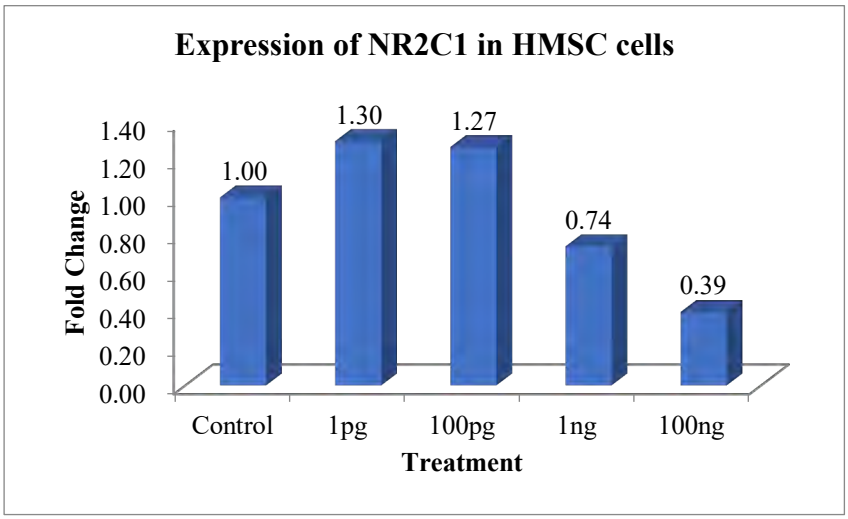



**Figure 9.3: NR2C1 melt peak**

**Table 9 and Graph 9 for relative expression of NR2C1 gene:**

| Sample | Actin | NR2C1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 17.61 | -3.14 | 0.00 | 1.00 |
| 1pg | 20.92 | 17.40 | -3.52 | -0.38 | 1.30 |
| 100pg | 21.12 | 17.64 | -3.48 | -0.34 | 1.27 |
| 1ng | 21.04 | 18.33 | -2.71 | 0.44 | 0.74 |
| 100ng | 20.23 | 18.45 | -1.78 | 1.36 | 0.39 |



## NR3A2 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR3A2 | Unkn | Control | c DNA | 29.32 | 28.71 | 29.01 |
| SYBR | NR3A2 | Unkn | 1pg | c DNA | 28.34 | 28.32 | 28.33 |
| SYBR | NR3A2 | Unkn | 100pg | c DNA | 29.06 | 28.81 | 28.93 |
| SYBR | NR3A2 | Unkn | 1ng | c DNA | 29.56 | 28.80 | 29.18 |
| SYBR | NR3A2 | Unkn | 100ng | c DNA | 29.13 | 29.08 | 29.10 |
| SYBR | NR3A2 | NTC | NTC | NTC | N/A | N/A | N/A |

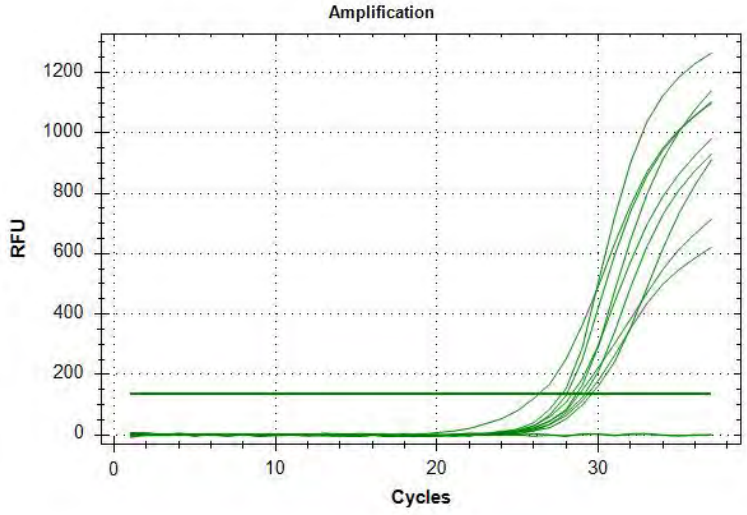



**Figure 10.1: NR3A2 Amplification curve**

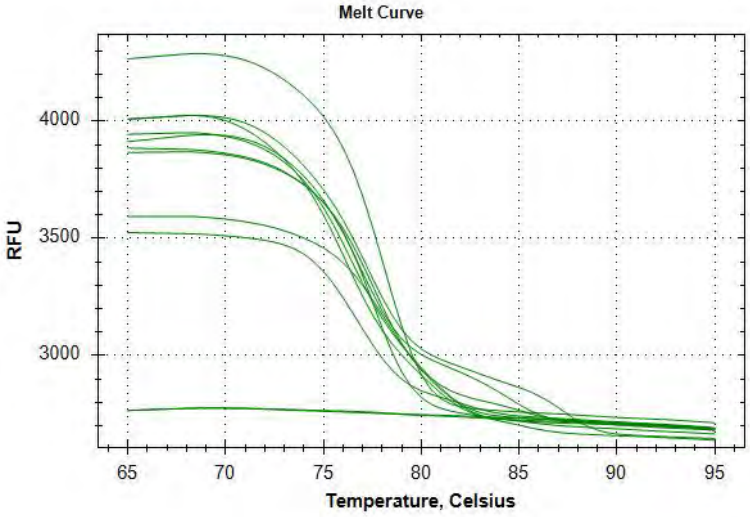



**Figure 10.2: NR3A2 melt curve**

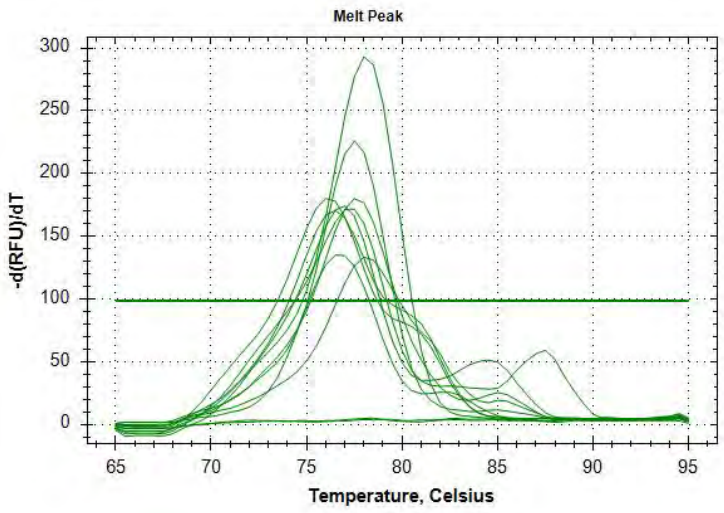
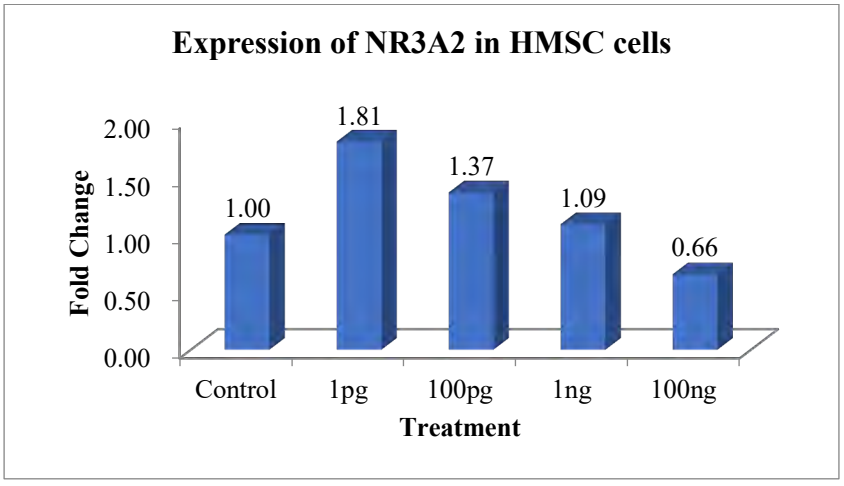



**Figure 10.3: NR3A2 melt peak**

**Table 10 and Graph 10 for relative expression of NR3A2 gene:**

| Sample | Actin | NR3A2 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 29.01 | 8.26 | 0.00 | 1.00 |
| 1pg | 20.92 | 28.33 | 7.41 | -0.85 | 1.81 |
| 100pg | 21.12 | 28.93 | 7.81 | -0.45 | 1.37 |
| 1ng | 21.04 | 29.18 | 8.14 | -0.13 | 1.09 |
| 100ng | 20.23 | 29.10 | 8.87 | 0.61 | 0.66 |



## NR3B2 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR3B2 | Unkn | Control | c DNA | 27.71 | 28.63 | 28.17 |
| SYBR | NR3B2 | Unkn | 1pg | c DNA | 28.03 | 28.33 | 28.18 |
| SYBR | NR3B2 | Unkn | 100pg | c DNA | 26.86 | 27.79 | 27.32 |
| SYBR | NR3B2 | Unkn | 1ng | c DNA | 28.20 | 27.64 | 27.92 |
| SYBR | NR3B2 | Unkn | 100ng | c DNA | 27.46 | 26.95 | 27.20 |
| SYBR | NR3B2 | NTC | NTC | NTC | N/A | N/A | N/A |

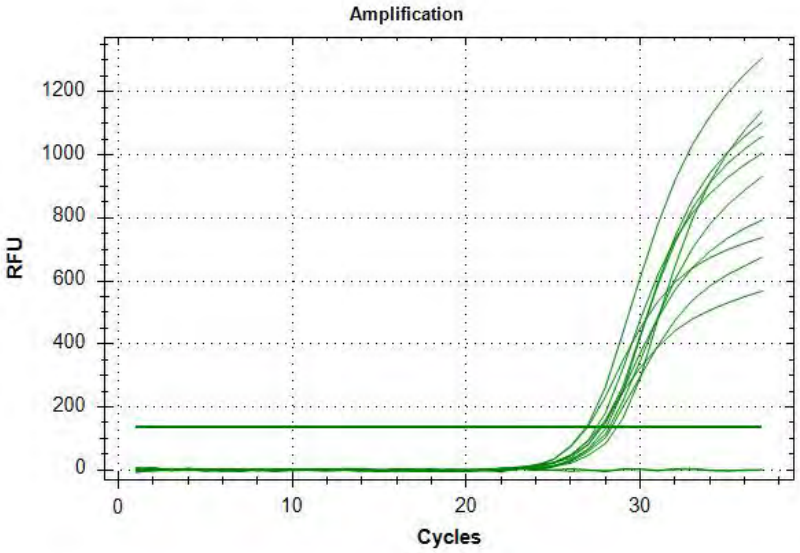



**Figure 11.1: NR3B2 Amplification curve**

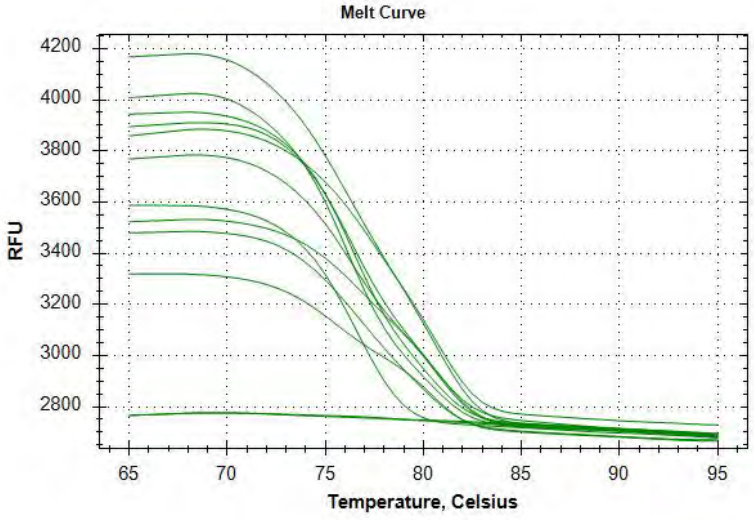



**Figure 11.2: NR3B2 melt curve**

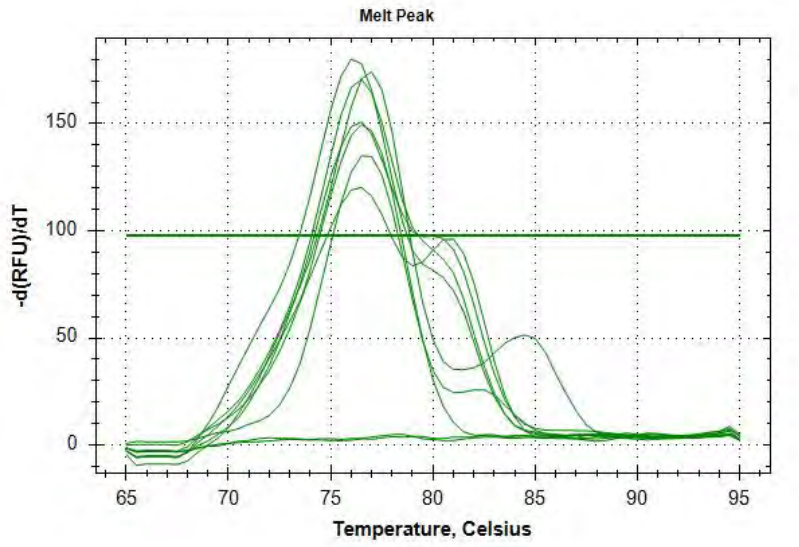
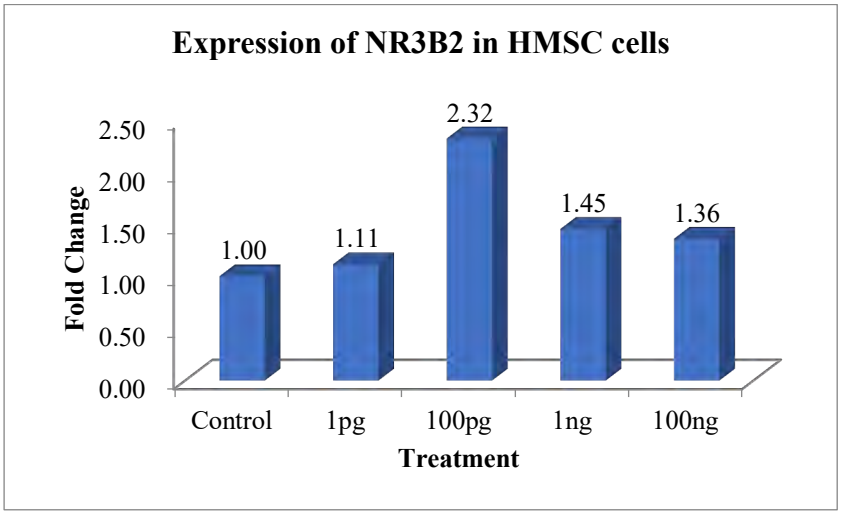



**Figure 11.3: NR3B2 melt peak**

**Table 11 and Graph 11 for relative expression of NR3B2 gene:**

| Sample | Actin | NR3B2 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 28.17 | 7.42 | 0.00 | 1.00 |
| 1pg | 20.92 | 28.18 | 7.26 | -0.16 | 1.11 |
| 100pg | 21.12 | 27.32 | 6.20 | -1.22 | 2.32 |
| 1ng | 21.04 | 27.92 | 6.88 | -0.54 | 1.45 |
| 100ng | 20.23 | 27.20 | 6.97 | -0.44 | 1.36 |



## NR1A1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1A1 | Unkn | Control | c DNA | 19.63 | 26.28 | 22.95 |
| SYBR | NR1A1 | Unkn | 1pg | c DNA | 18.92 | 19.30 | 19.11 |
| SYBR | NR1A1 | Unkn | 100pg | c DNA | 19.56 | 19.86 | 19.71 |
| SYBR | NR1A1 | Unkn | 1ng | c DNA | 20.12 | 20.48 | 20.30 |
| SYBR | NR1A1 | Unkn | 100ng | c DNA | 19.95 | 20.10 | 20.02 |
| SYBR | NR1A1 | NTC | NTC | NTC | N/A | N/A | N/A |

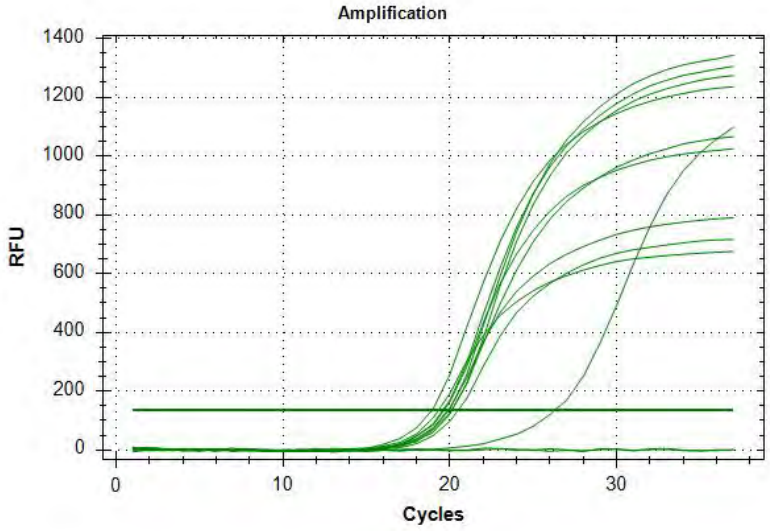



**Figure 12.1: NR1A1 Amplification curve**

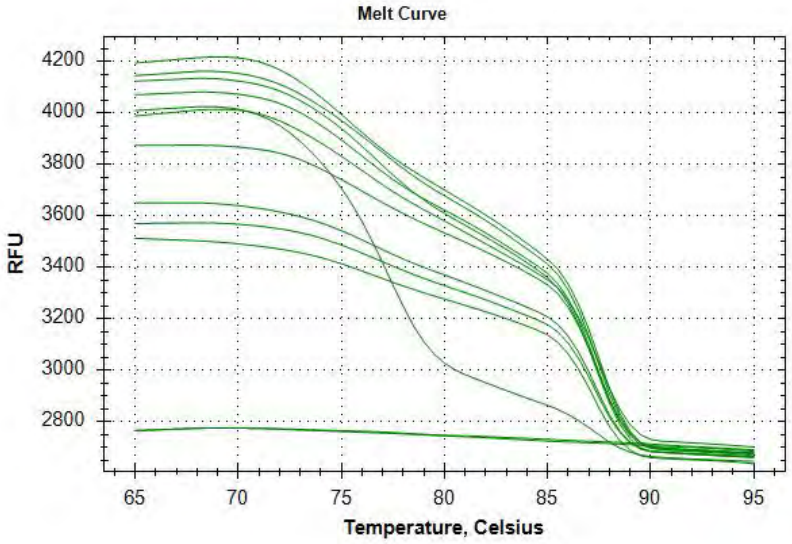



**Figure 12.2: NR1A1 melt curve**

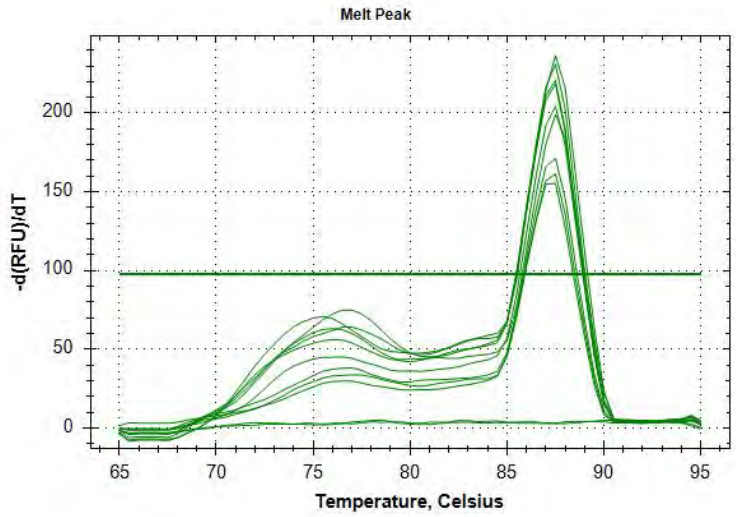
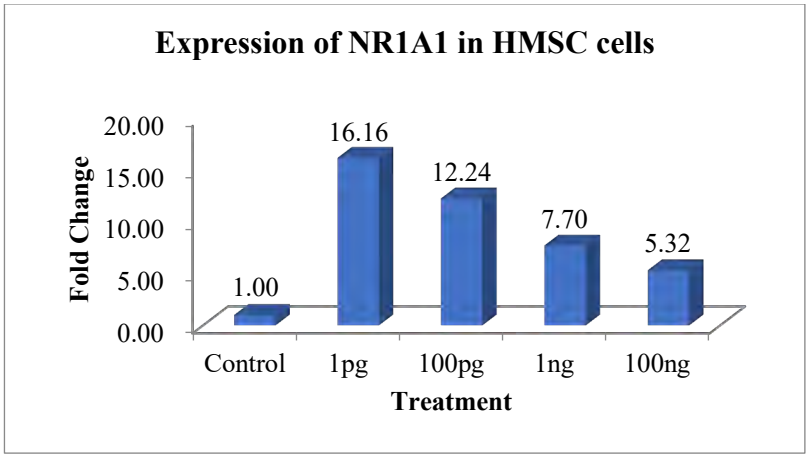



**Figure 12.3: NR1A1 melt peak**

**Table 12 and Graph 12 for relative expression of NR1A1 gene:**

| Sample | Actin | NR1A1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 22.95 | 2.20 | 0.00 | 1.00 |
| 1pg | 20.92 | 19.11 | -1.81 | -4.01 | 16.16 |
| 100pg | 21.12 | 19.71 | -1.41 | -3.61 | 12.24 |
| 1ng | 21.04 | 20.30 | -0.74 | -2.94 | 7.70 |
| 100ng | 20.23 | 20.02 | -0.21 | -2.41 | 5.32 |



## NR1B1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1B1 | Unkn | Control | c DNA | 19.89 | 19.98 | 19.93 |
| SYBR | NR1B1 | Unkn | 1pg | c DNA | 19.74 | 19.76 | 19.75 |
| SYBR | NR1B1 | Unkn | 100pg | c DNA | 20.51 | 20.76 | 20.64 |
| SYBR | NR1B1 | Unkn | 1ng | c DNA | 21.11 | 21.20 | 21.16 |
| SYBR | NR1B1 | Unkn | 100ng | c DNA | 20.51 | 20.65 | 20.58 |
| SYBR | NR1B1 | NTC | NTC | NTC | N/A | N/A | N/A |

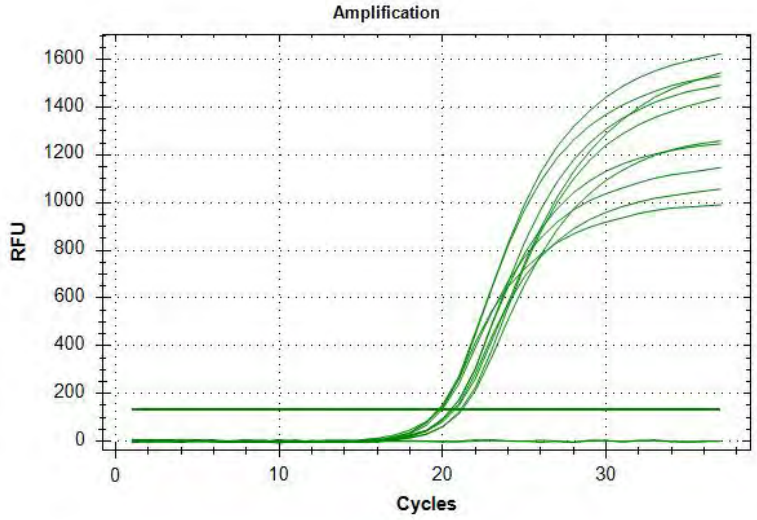



**Figure 13.1: NR1B1 Amplification curve**

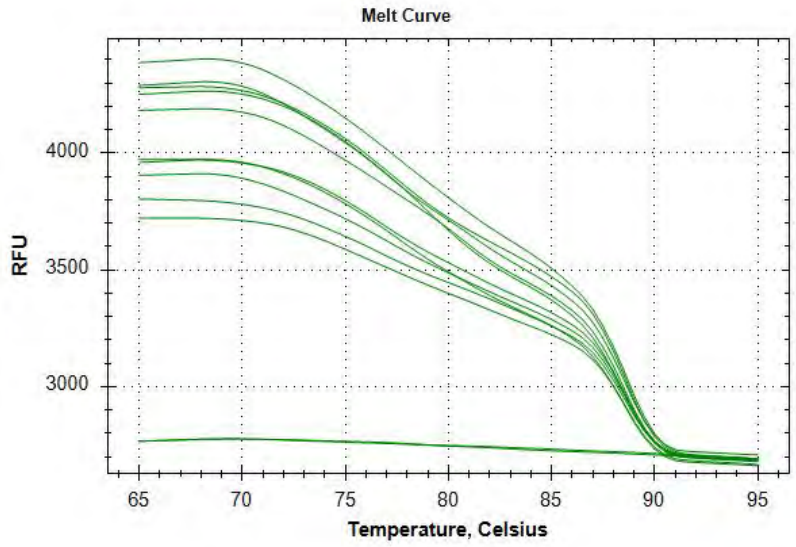



**Figure 13.2: NR1B1 melt curve**

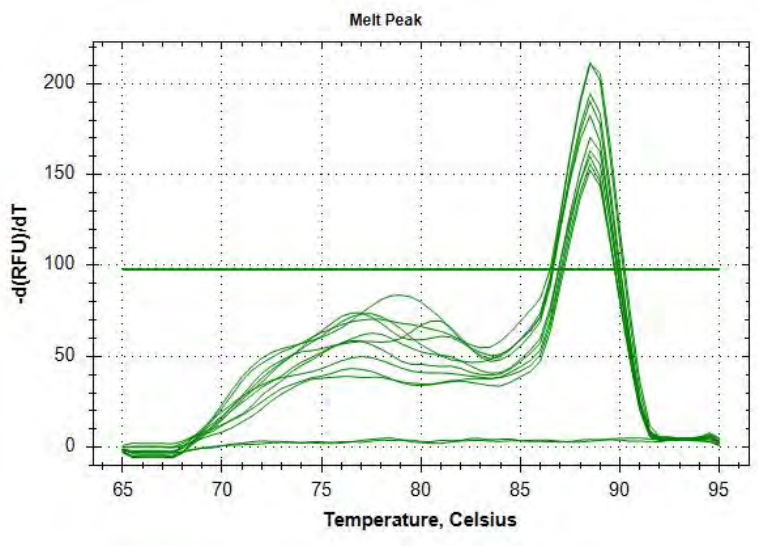
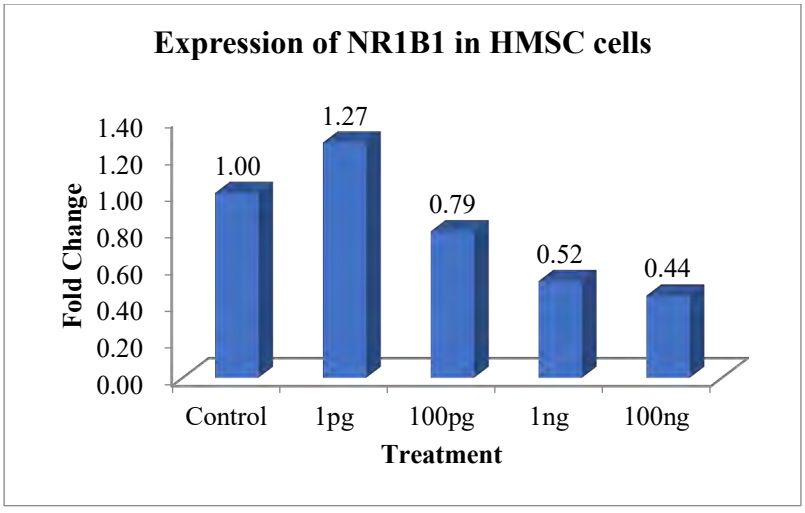



**Figure 13.3: NR1B1 melt peak**

**Table 13 and Graph 13 for relative expression of NR1B1 gene:**

| Sample | Actin | NR1B1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 19.93 | -0.82 | 0.00 | 1.00 |
| 1pg | 20.92 | 19.75 | -1.17 | -0.35 | 1.27 |
| 100pg | 21.12 | 20.64 | -0.48 | 0.33 | 0.79 |
| 1ng | 21.04 | 21.16 | 0.12 | 0.93 | 0.52 |
| 100ng | 20.23 | 20.58 | 0.35 | 1.17 | 0.44 |



## NR1D1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1D1 | Unkn | Control | c DNA | 20.26 | 20.50 | 20.38 |
| SYBR | NR1D1 | Unkn | 1pg | c DNA | 19.29 | 19.91 | 19.60 |
| SYBR | NR1D1 | Unkn | 100pg | c DNA | 20.16 | 20.60 | 20.38 |
| SYBR | NR1D1 | Unkn | 1ng | c DNA | 20.78 | 21.21 | 20.99 |
| SYBR | NR1D1 | Unkn | 100ng | c DNA | 20.46 | 20.71 | 20.58 |
| SYBR | NR1D1 | NTC | NTC | NTC | N/A | N/A | N/A |

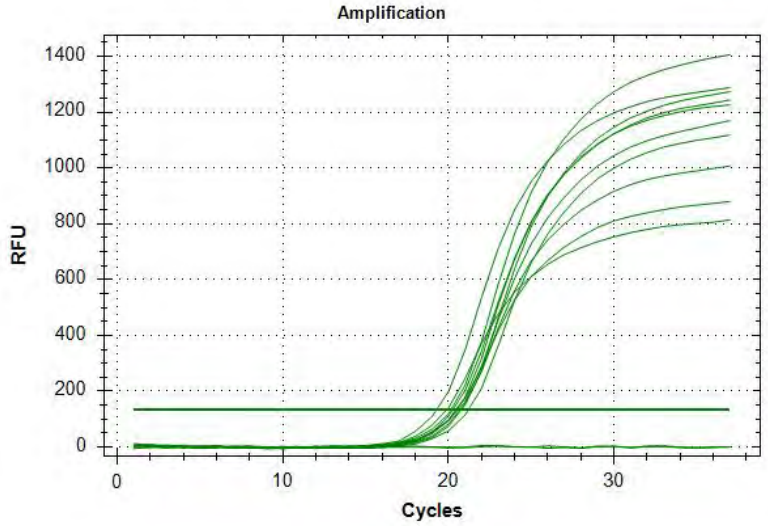



**Figure 14.1: NR1D1 Amplification curve**

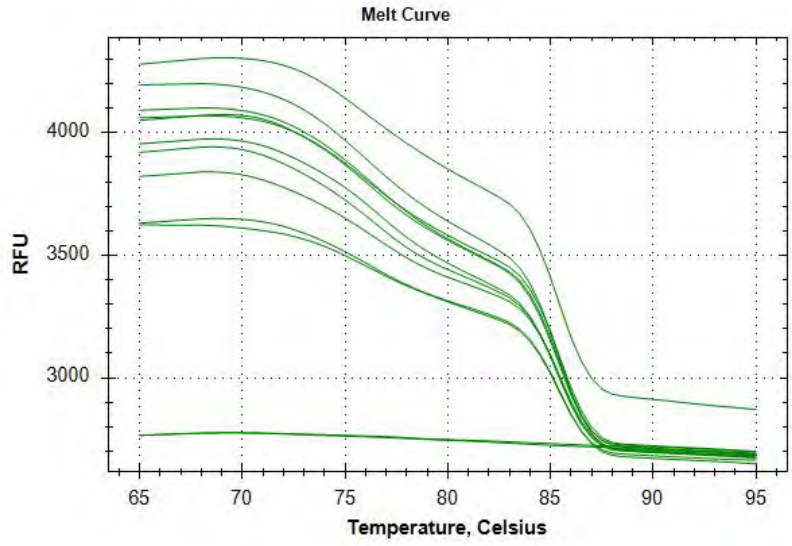



**Figure 14.2: NR1D1 melt curve**

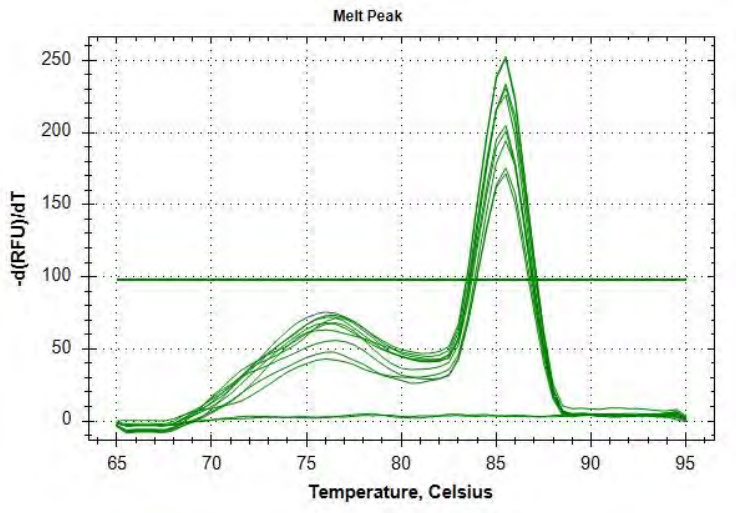
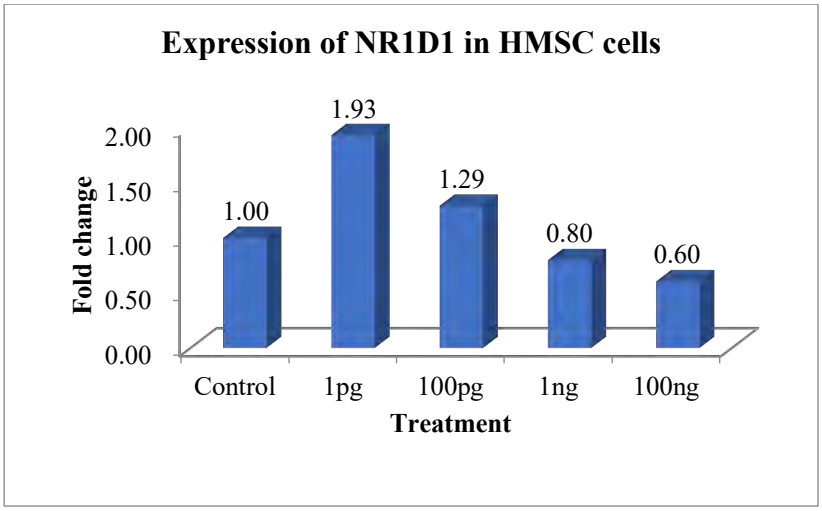



**Figure 14.3: NR1D1 melt peak**

**Table 14 and Graph 14 for relative expression of NR1D1 gene:**

| Sample | Actin | NR1D1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 20.38 | -0.37 | 0.00 | 1.00 |
| 1pg | 20.92 | 19.60 | -1.32 | -0.95 | 1.93 |
| 100pg | 21.12 | 20.38 | -0.74 | -0.37 | 1.29 |
| 1ng | 21.04 | 20.99 | -0.05 | 0.33 | 0.80 |
| 100ng | 20.23 | 20.58 | 0.35 | 0.73 | 0.60 |



## NR1A2 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1A2 | Unkn | Control | c DNA | 29.36 | 24.85 | 27.11 |
| SYBR | NR1A2 | Unkn | 1pg | c DNA | 28.53 | 20.14 | 24.33 |
| SYBR | NR1A2 | Unkn | 100pg | c DNA | 32.23 | 20.81 | 26.52 |
| SYBR | NR1A2 | Unkn | 1ng | c DNA | 23.22 | 23.74 | 23.48 |
| SYBR | NR1A2 | Unkn | 100ng | c DNA | 26.29 | 20.64 | 23.47 |
| SYBR | NR1A2 | NTC | NTC | NTC | N/A | N/A | N/A |

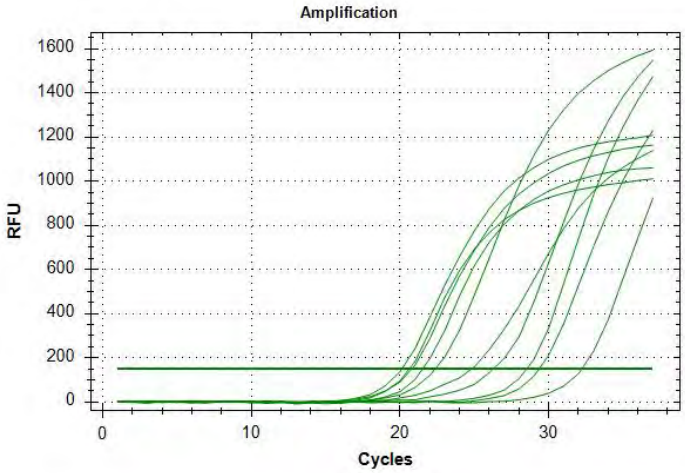



**Figure 15.1: NR1A2 Amplification curve**

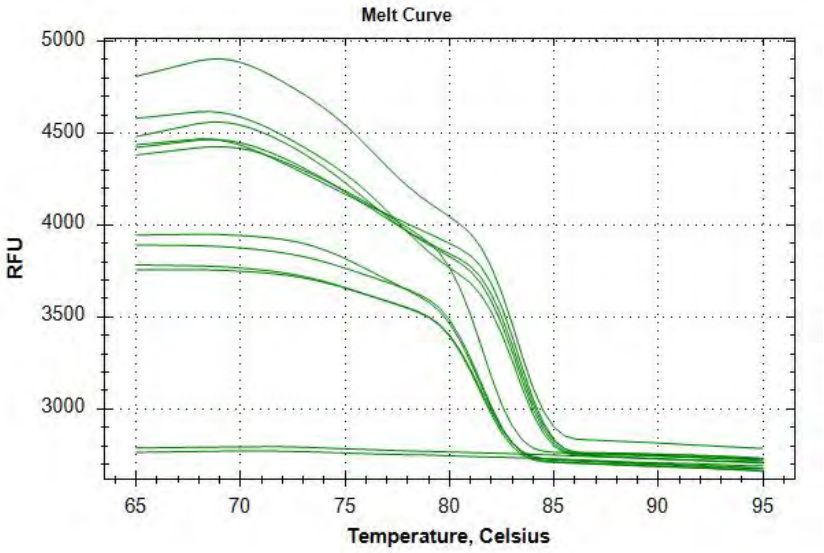



**Figure 15.2: NR1A2 melt curve**

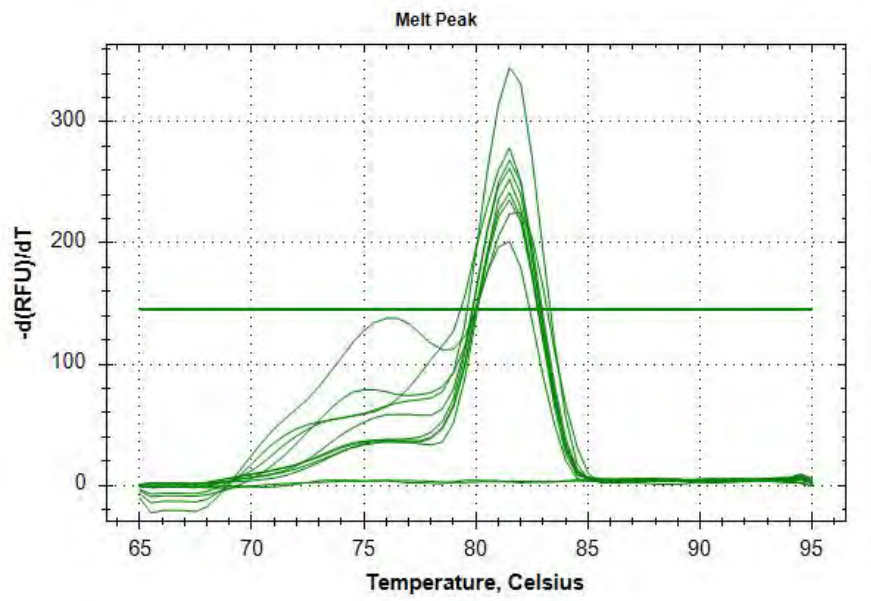
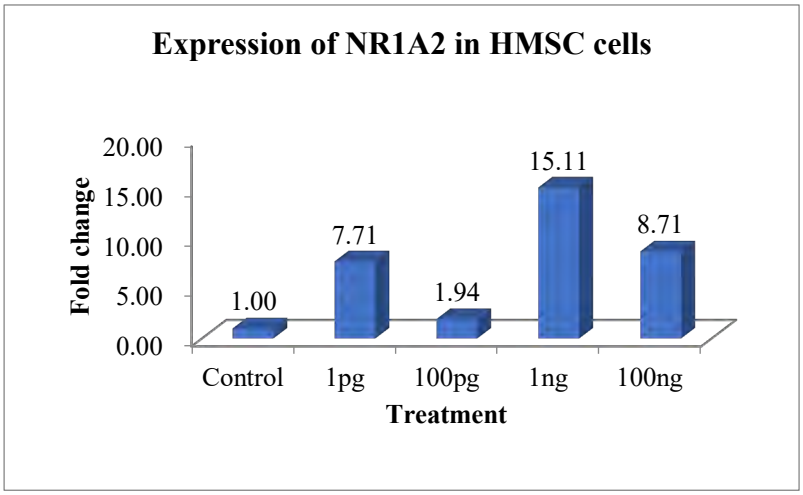



**Figure 15.3: NR1A2 melt peak**

**Table 15 and Graph 15 for relative expression of NR1A2 gene:**

| Sample | Actin | NR1A2 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 27.11 | 6.36 | 0.00 | 1.00 |
| 1pg | 20.92 | 24.33 | 3.41 | -2.95 | 7.71 |
| 100pg | 21.12 | 26.52 | 5.40 | -0.96 | 1.94 |
| 1ng | 21.04 | 23.48 | 2.44 | -3.92 | 15.11 |
| 100ng | 20.23 | 23.47 | 3.24 | -3.12 | 8.71 |



## NR1B2 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1B2 | Unkn | Control | c DNA | 20.13 | 19.27 | 19.70 |
| SYBR | NR1B2 | Unkn | 1pg | c DNA | 19.54 | 18.73 | 19.14 |
| SYBR | NR1B2 | Unkn | 100pg | c DNA | 19.99 | 19.21 | 19.60 |
| SYBR | NR1B2 | Unkn | 1ng | c DNA | 22.03 | 20.07 | 21.05 |
| SYBR | NR1B2 | Unkn | 100ng | c DNA | 19.86 | 19.43 | 19.64 |
| SYBR | NR1B2 | NTC | NTC | NTC | N/A | N/A | N/A |

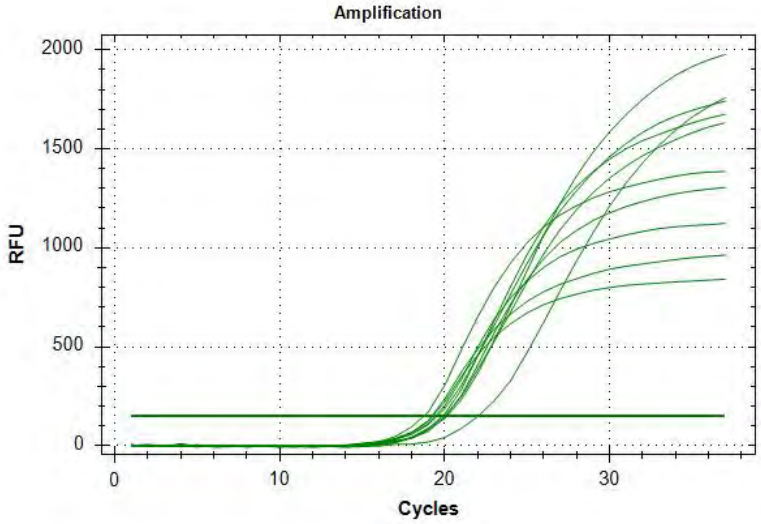



**Figure 16.1: NR1B2 Amplification curve**

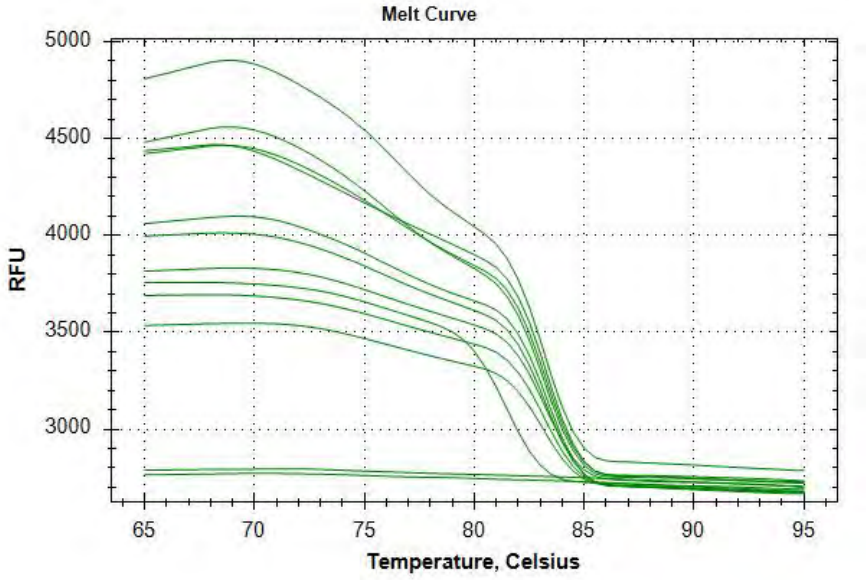



**Figure 16.2: NR1B2 melt curve**

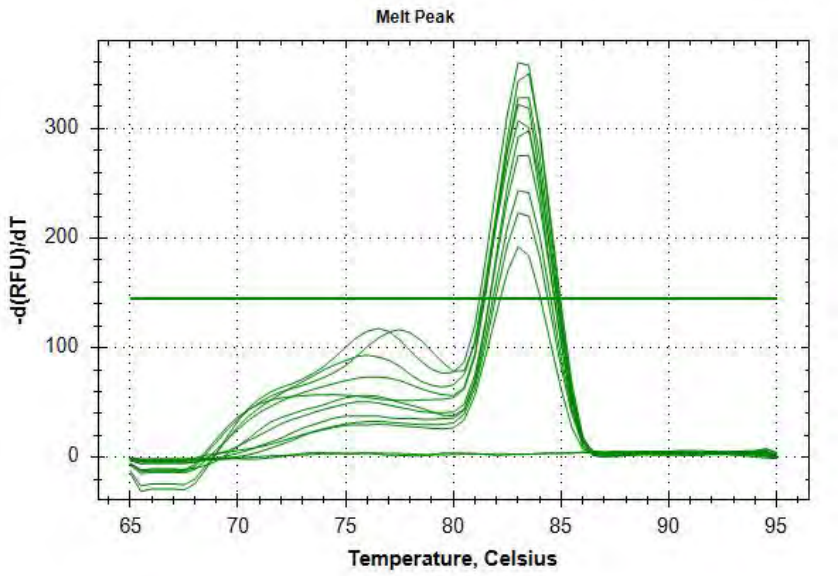
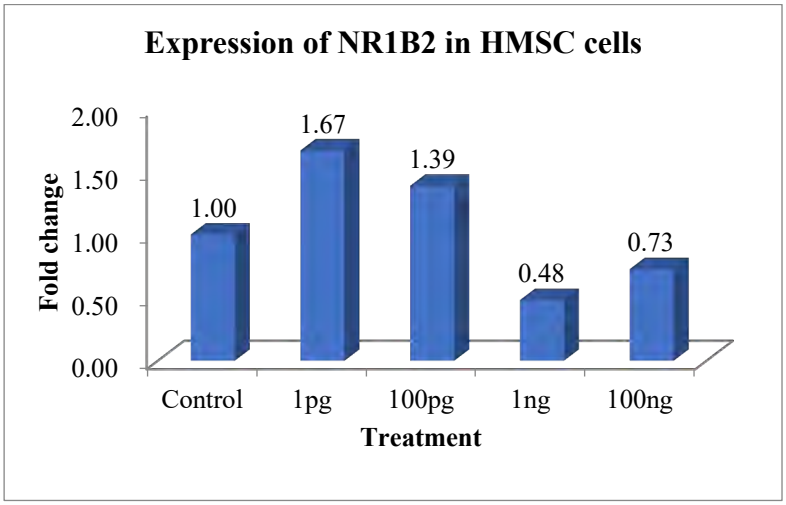



**Figure 16.3: NR1B2 melt peak**

**Table 16 and Graph 16 for relative expression of NR1B2 gene:**

| Sample | Actin | NR1B2 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 19.70 | -1.05 | 0.00 | 1.00 |
| 1pg | 20.92 | 19.14 | -1.78 | -0.74 | 1.67 |
| 100pg | 21.12 | 19.60 | -1.52 | -0.47 | 1.39 |
| 1ng | 21.04 | 21.05 | 0.01 | 1.06 | 0.48 |
| 100ng | 20.23 | 19.64 | -0.59 | 0.46 | 0.73 |



## NR1D2 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1D2 | Unkn | Control | c DNA | 19.32 | 18.89 | 19.10 |
| SYBR | NR1D2 | Unkn | 1pg | c DNA | 20.56 | 18.31 | 19.44 |
| SYBR | NR1D2 | Unkn | 100pg | c DNA | 22.80 | 18.32 | 20.56 |
| SYBR | NR1D2 | Unkn | 1ng | c DNA | 22.56 | 19.25 | 20.90 |
| SYBR | NR1D2 | Unkn | 100ng | c DNA | 23.87 | 18.86 | 21.36 |
| SYBR | NR1D2 | NTC | NTC | NTC | N/A | N/A | N/A |

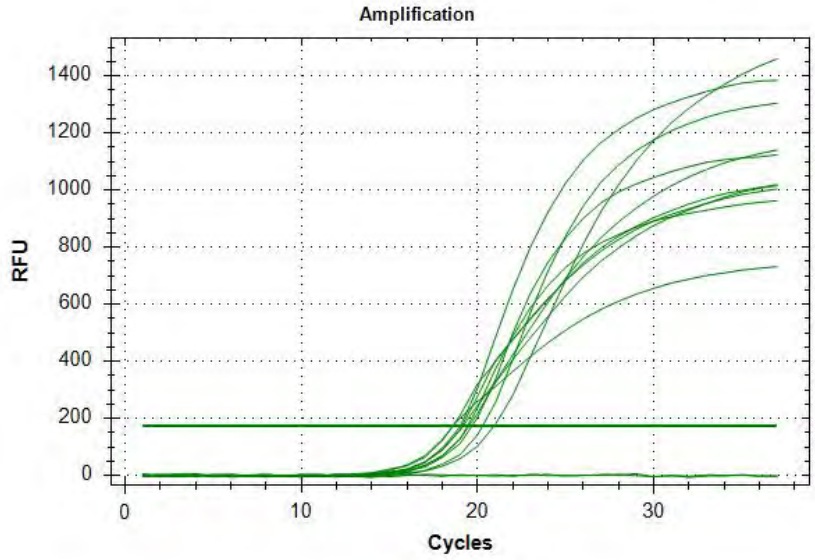



**Figure 17.1: NR1D2 Amplification curve**

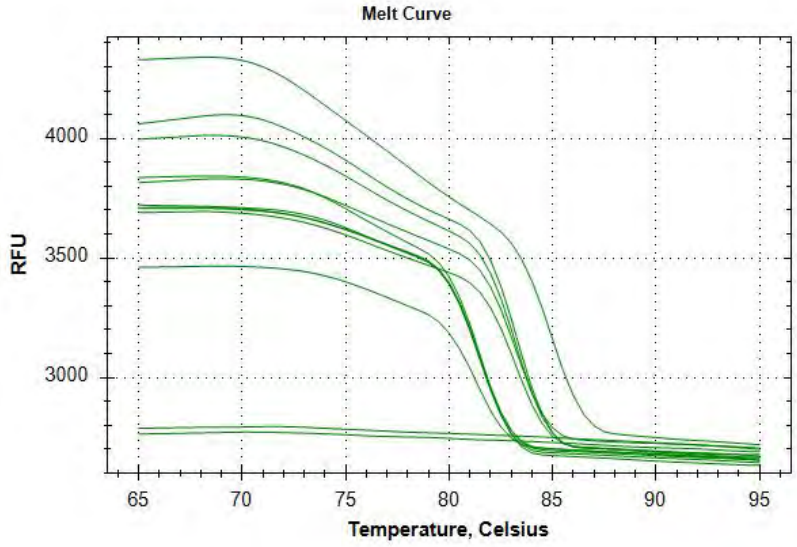



**Figure 17.2: NR1D2 melt curve**

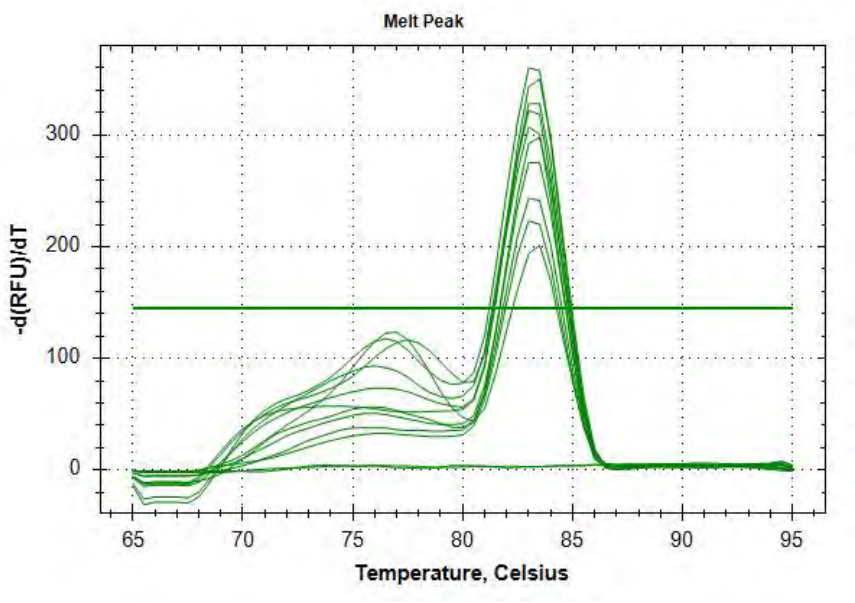
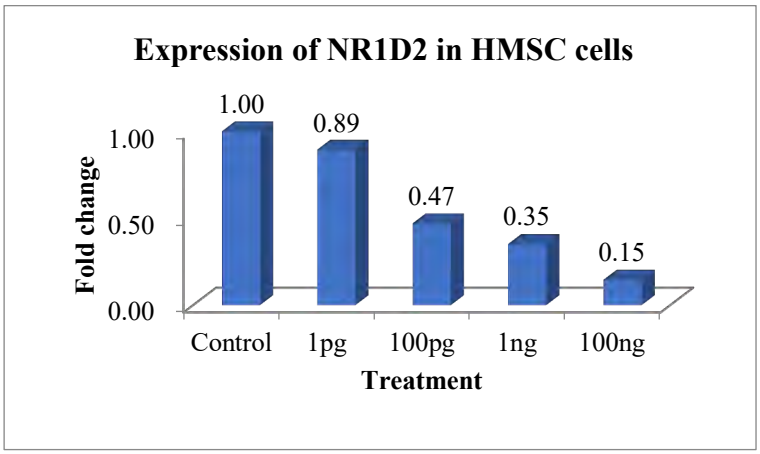



**Figure 17.3: NR1D2 melt peak**

**Table 17 and Graph 17 for relative expression of NR1D2 gene:**

| Sample | Actin | NR1D2 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 19.10 | -1.65 | 0.00 | 1.00 |
| 1pg | 20.92 | 19.44 | -1.48 | 0.16 | 0.89 |
| 100pg | 21.12 | 20.56 | -0.56 | 1.09 | 0.47 |
| 1ng | 21.04 | 20.90 | -0.14 | 1.51 | 0.35 |
| 100ng | 20.23 | 21.36 | 1.13 | 2.78 | 0.15 |



## NR4A1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR4A1 | Unkn | Control | c DNA | 24.28 | 23.13 | 23.71 |
| SYBR | NR4A1 | Unkn | 1pg | c DNA | 23.59 | 22.45 | 23.02 |
| SYBR | NR4A1 | Unkn | 100pg | c DNA | 25.91 | 23.41 | 24.66 |
| SYBR | NR4A1 | Unkn | 1ng | c DNA | 24.01 | 23.55 | 23.78 |
| SYBR | NR4A1 | Unkn | 100ng | c DNA | 24.58 | 23.22 | 23.90 |
| SYBR | NR4A1 | NTC | NTC | NTC | N/A | N/A | N/A |

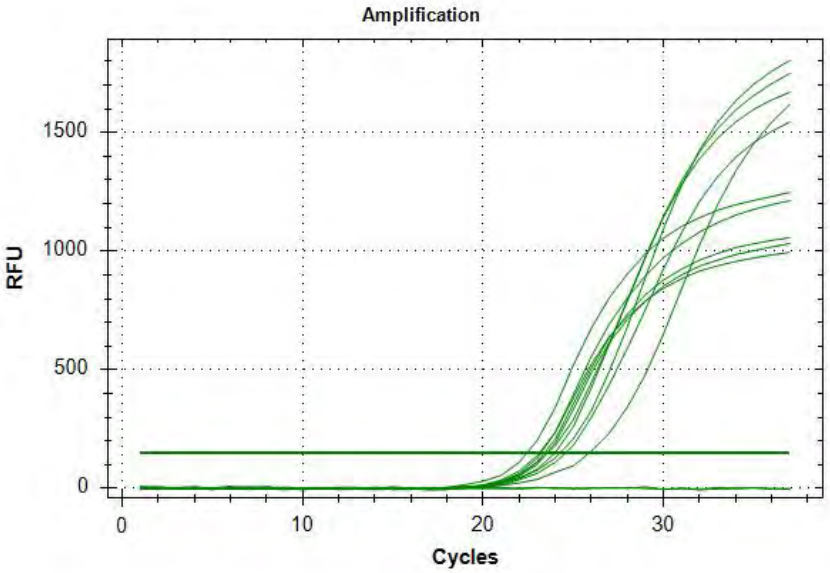



**Figure 18.1: NR4A1 Amplification curve**

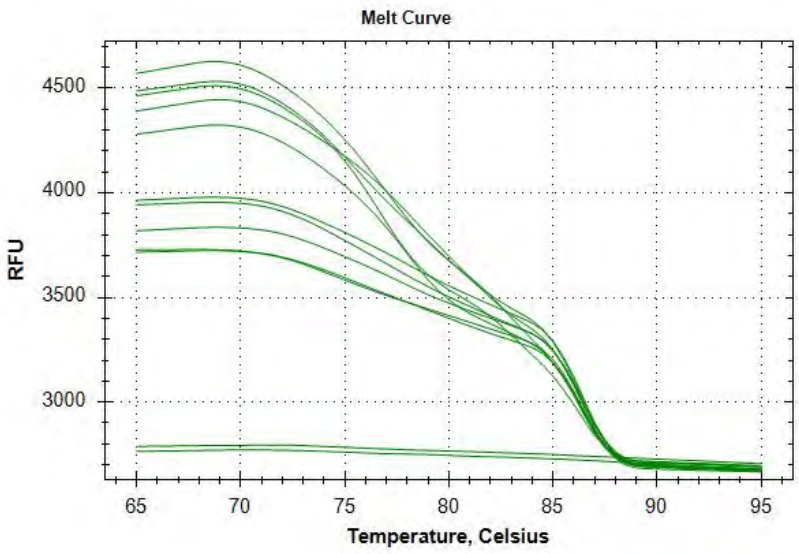



**Figure 18.2: NR4A1 melt curve**

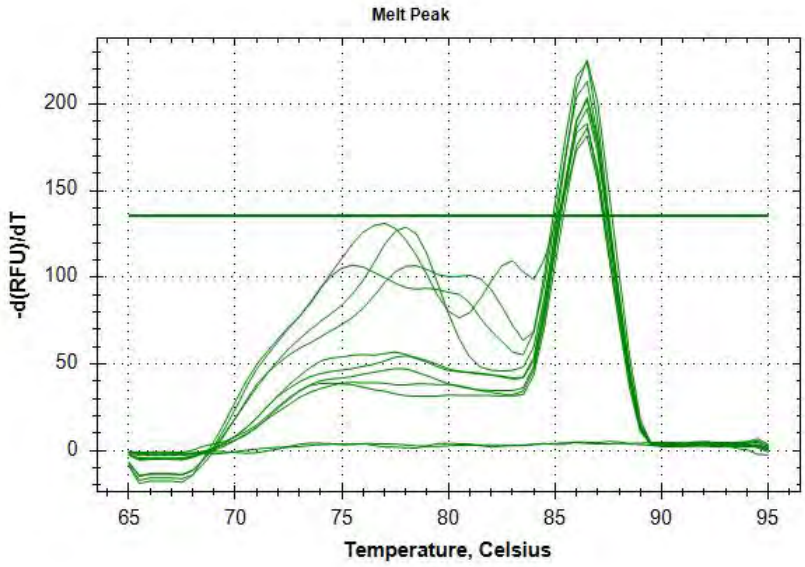
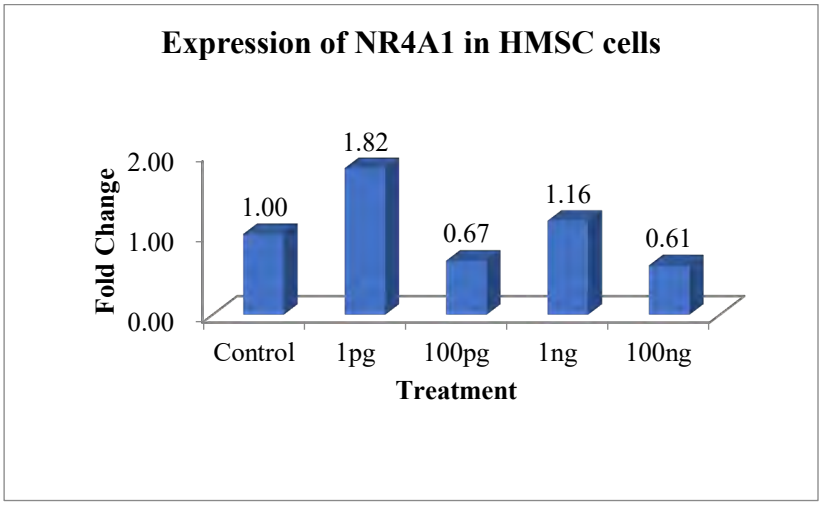



**Figure 18.3: NR4A1 melt peak**

**Table 18 and Graph 18 for relative expression of NR4A1 gene:**

| Sample | Actin | NR4A1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 23.71 | 2.96 | 0.00 | 1.00 |
| 1pg | 20.92 | 23.02 | 2.10 | -0.86 | 1.82 |
| 100pg | 21.12 | 24.66 | 3.54 | 0.58 | 0.67 |
| 1ng | 21.04 | 23.78 | 2.74 | -0.22 | 1.16 |
| 100ng | 20.23 | 23.90 | 3.67 | 0.71 | 0.61 |



## NR1B3 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1B3 | Unkn | Control | c DNA | 22.48 | 20.95 | 21.72 |
| SYBR | NR1B3 | Unkn | 1pg | c DNA | 20.63 | 20.47 | 20.55 |
| SYBR | NR1B3 | Unkn | 100pg | c DNA | 22.97 | 21.08 | 22.03 |
| SYBR | NR1B3 | Unkn | 1ng | c DNA | 22.59 | 21.53 | 22.06 |
| SYBR | NR1B3 | Unkn | 100ng | c DNA | 21.94 | 21.02 | 21.48 |
| SYBR | NR1B3 | NTC | NTC | NTC | N/A | N/A | N/A |

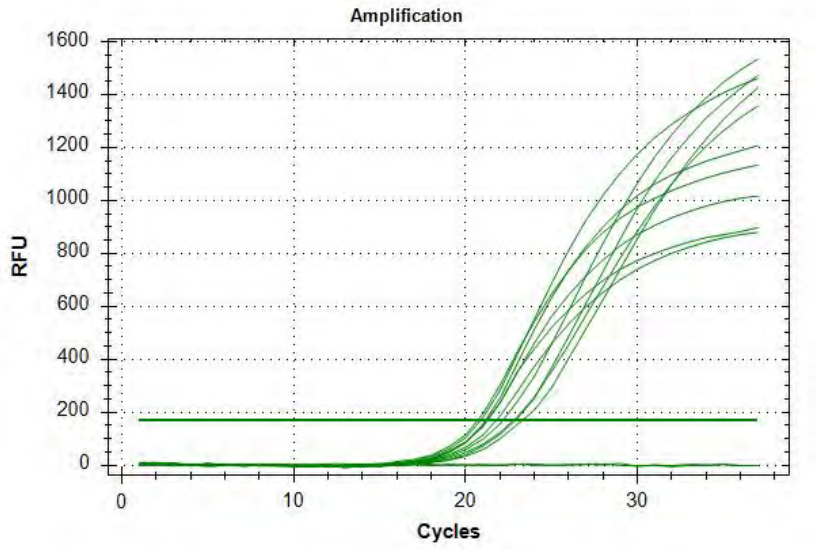



**Figure 19.1: NR1B3 Amplification curve**

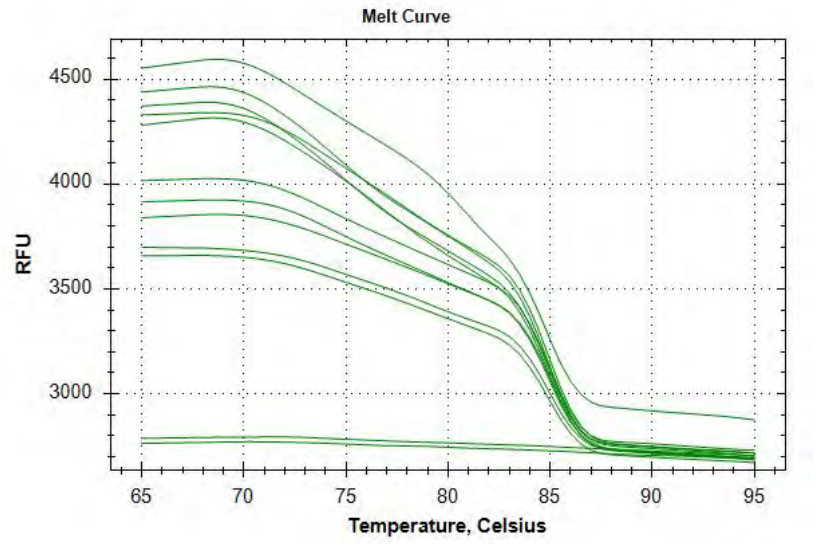



**Figure 19.2: NR1B3 melt curve**

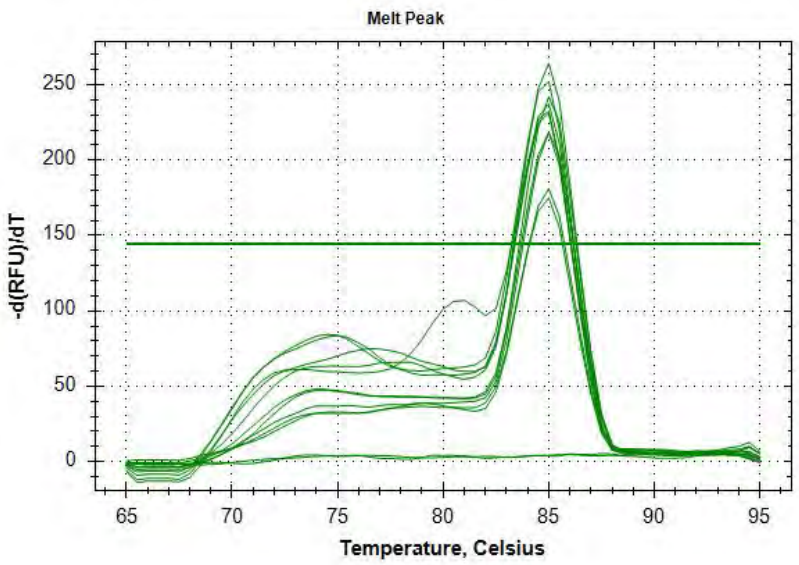
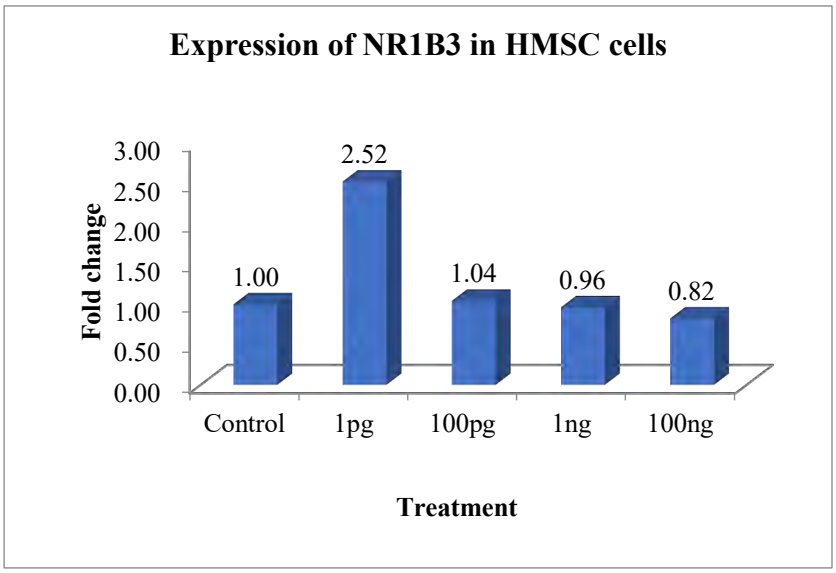



**Figure 19.3: NR1B3 melt peak**

**Table 19 and Graph 19 for relative expression of NR1B3 gene:**

| Sample | Actin | NR1B3 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 21.72 | 0.97 | 0.00 | 1.00 |
| 1pg | 20.92 | 20.55 | -0.37 | -1.34 | 2.52 |
| 100pg | 21.12 | 22.03 | 0.91 | -0.06 | 1.04 |
| 1ng | 21.04 | 22.06 | 1.02 | 0.05 | 0.96 |
| 100ng | 20.23 | 21.48 | 1.25 | 0.28 | 0.82 |



## NR2B1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR2B1 | Unkn | Control | c DNA | 17.84 | 17.60 | 17.72 |
| SYBR | NR2B1 | Unkn | 1pg | c DNA | 17.44 | 17.36 | 17.40 |
| SYBR | NR2B1 | Unkn | 100pg | c DNA | 17.41 | 18.22 | 17.82 |
| SYBR | NR2B1 | Unkn | 1ng | c DNA | 17.94 | 18.10 | 18.02 |
| SYBR | NR2B1 | Unkn | 100ng | c DNA | 17.29 | 17.78 | 17.53 |
| SYBR | NR2B1 | NTC | NTC | NTC | N/A | N/A | N/A |

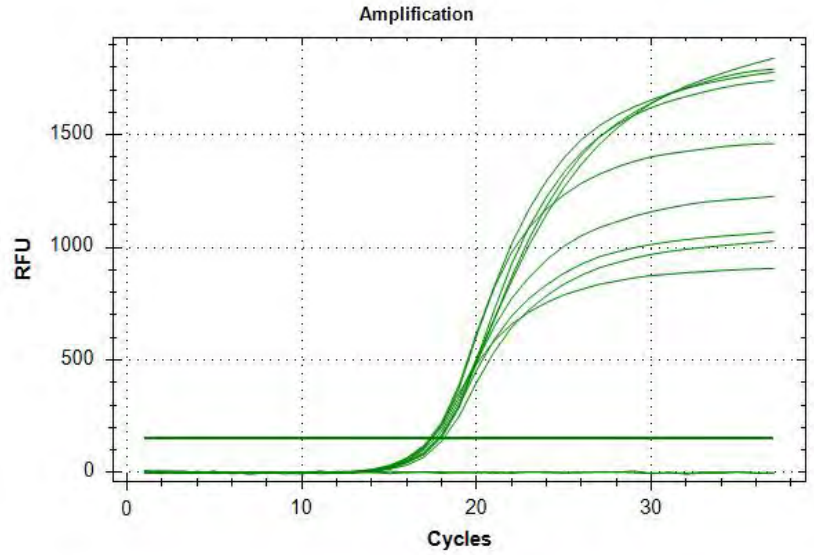



**Figure 20.1: NR2B1 Amplification curve**

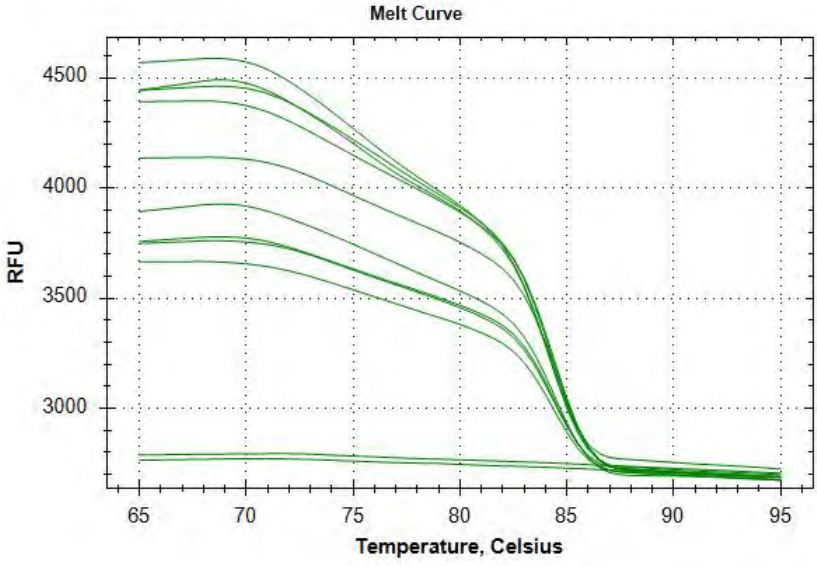



**Figure 20.2: NR2B1 melt curve**

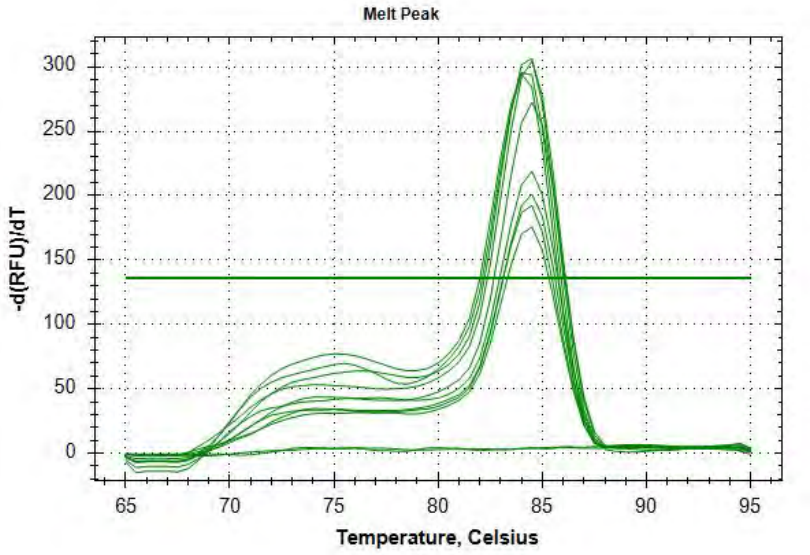
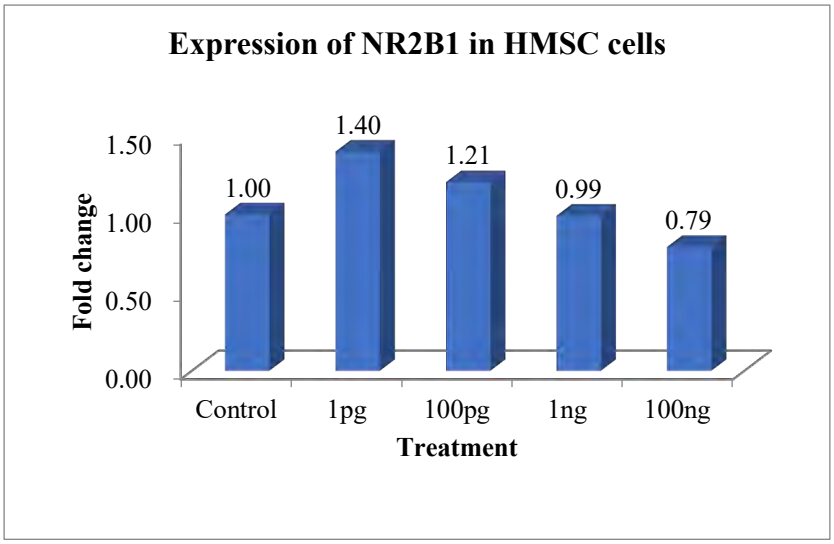



**Figure 20.3: NR2B1 melt peak**

**Table 20 and Graph 20 for relative expression of NR2B1 gene:**

| Sample | Actin | NR2B1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 17.72 | -3.03 | 0.00 | 1.00 |
| 1pg | 20.92 | 17.40 | -3.52 | -0.49 | 1.40 |
| 100pg | 21.12 | 17.82 | -3.30 | -0.27 | 1.21 |
| 1ng | 21.04 | 18.02 | -3.02 | 0.01 | 0.99 |
| 100ng | 20.23 | 17.53 | -2.70 | 0.34 | 0.79 |



## NR1I1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1I1 | Unkn | Control | c DNA | 27.11 | 19.60 | 23.35 |
| SYBR | NR1I1 | Unkn | 1pg | c DNA | 22.51 | 22.49 | 22.50 |
| SYBR | NR1I1 | Unkn | 100pg | c DNA | 28.04 | 19.64 | 23.84 |
| SYBR | NR1I1 | Unkn | 1ng | c DNA | 21.82 | 21.72 | 21.77 |
| SYBR | NR1I1 | Unkn | 100ng | c DNA | 27.45 | 19.98 | 23.71 |
| SYBR | NR1I1 | NTC | NTC | NTC | N/A | N/A | N/A |

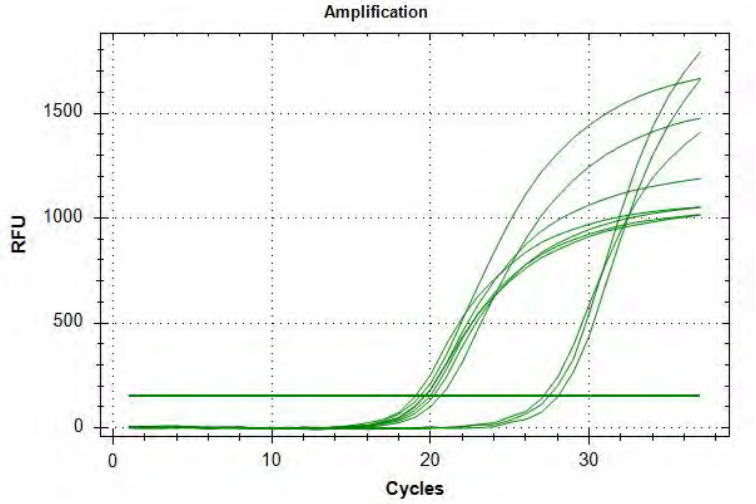



**Figure 21.1: NR1I1 Amplification curve**

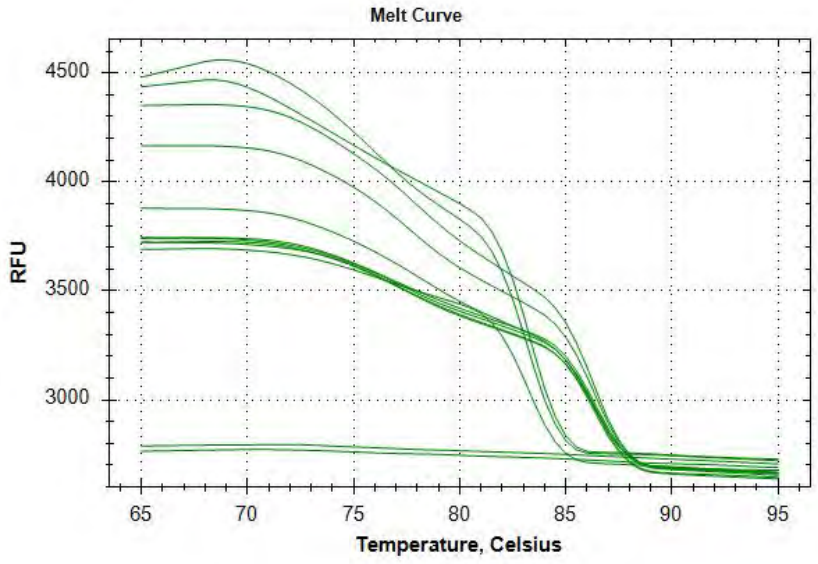



**Figure 21.2: NR1I1 melt curve**

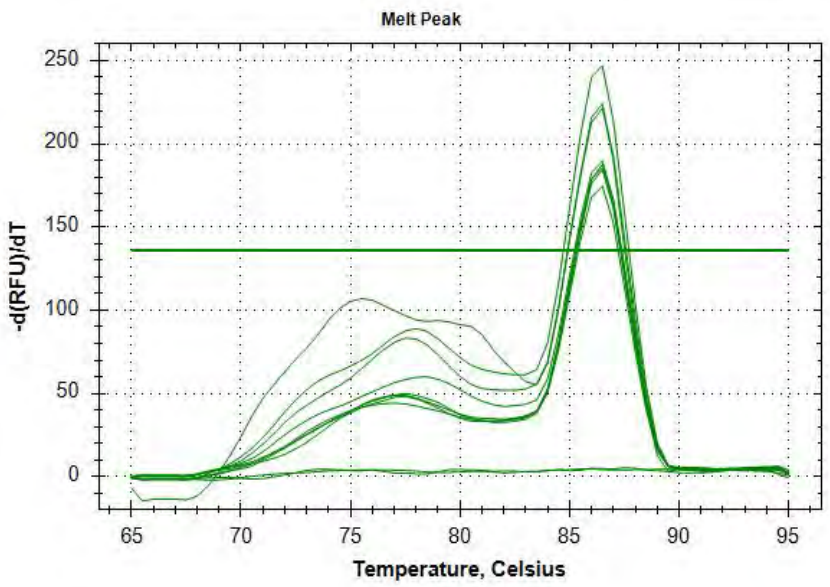
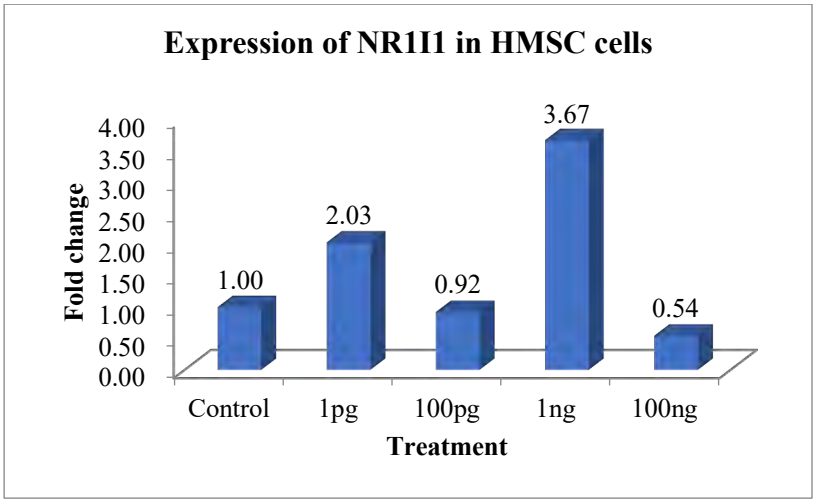



**Figure 21.3: NR1I1 melt peak**

**Table 21 and Graph 21 for relative expression of NR1I1 gene:**

| Sample | Actin | NR1I1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 23.35 | 2.60 | 0.00 | 1.00 |
| 1pg | 20.92 | 22.50 | 1.58 | -1.02 | 2.03 |
| 100pg | 21.12 | 23.84 | 2.72 | 0.12 | 0.92 |
| 1ng | 21.04 | 21.77 | 0.73 | -1.87 | 3.67 |
| 100ng | 20.23 | 23.71 | 3.48 | 0.88 | 0.54 |



## NR1H2 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1H2 | Unkn | Control | c DNA | 19.80 | 20.32 | 20.06 |
| SYBR | NR1H2 | Unkn | 1pg | c DNA | 19.62 | 20.12 | 19.87 |
| SYBR | NR1H2 | Unkn | 100pg | c DNA | 20.27 | 20.67 | 20.47 |
| SYBR | NR1H2 | Unkn | 1ng | c DNA | 21.04 | 21.36 | 21.20 |
| SYBR | NR1H2 | Unkn | 100ng | c DNA | 21.76 | 22.06 | 21.91 |
| SYBR | NR1H2 | NTC | NTC | NTC | N/A | N/A | N/A |

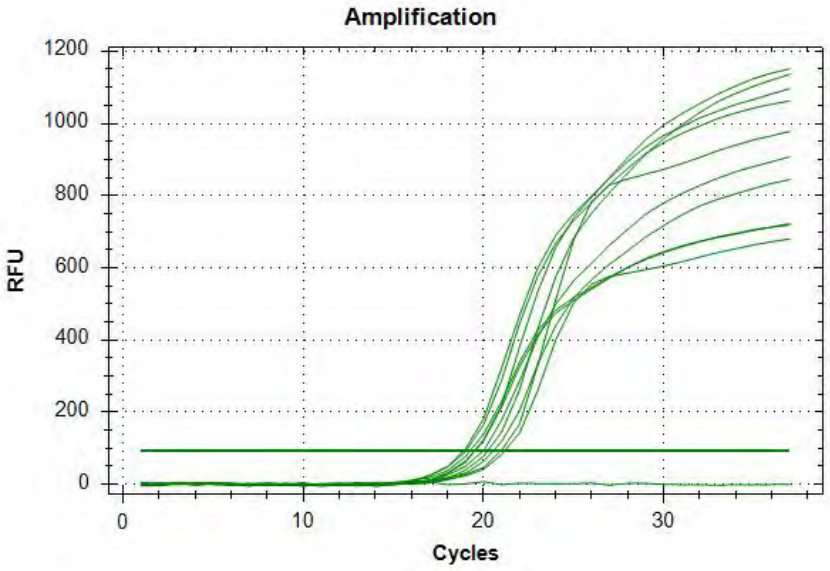



**Figure 22.1: NR1H2 Amplification curve**

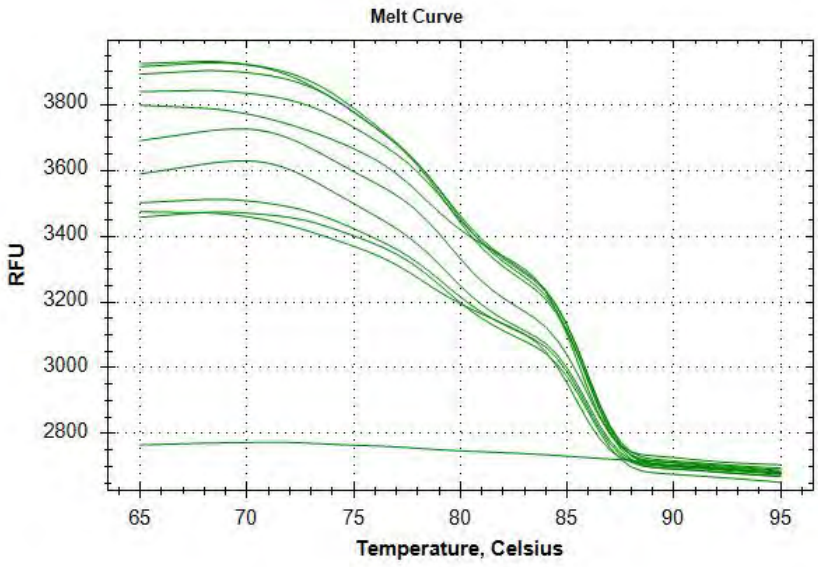



**Figure 22.2: NR1H2 melt curve**

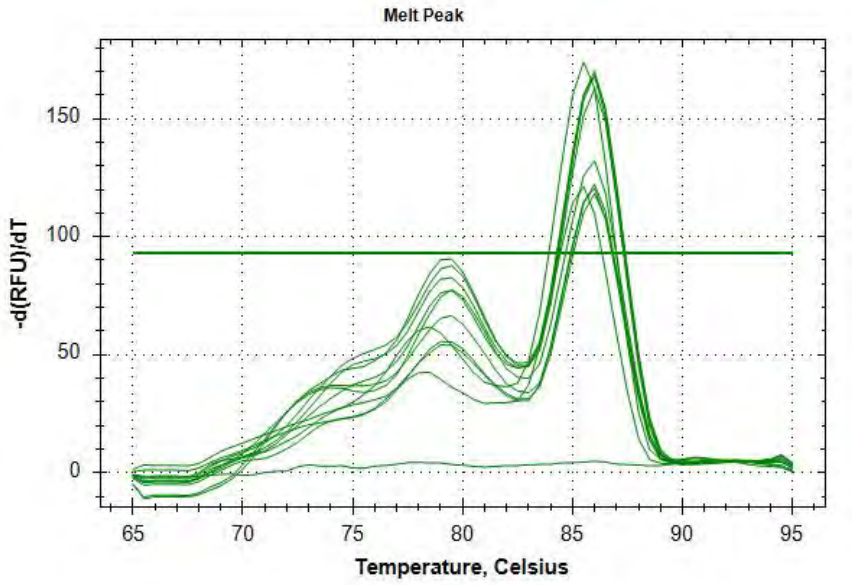
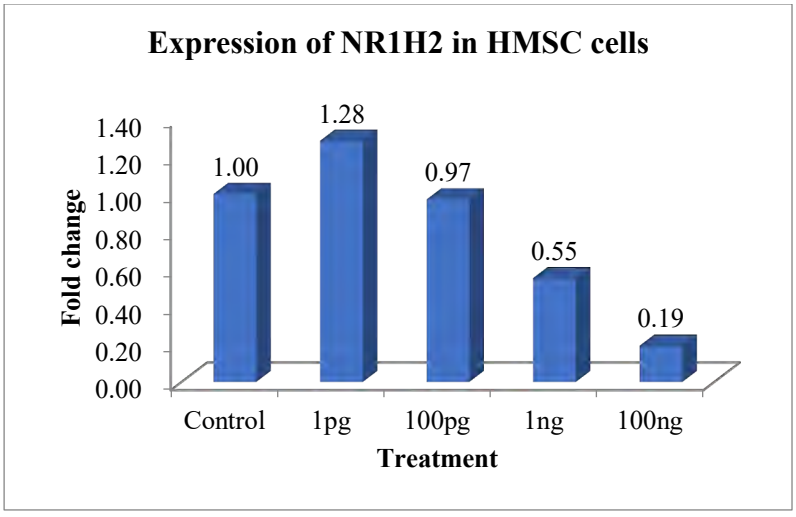



**Figure 22.3: NR1H2 melt peak**

**Table 22 and Graph 22 for relative expression of NR1H2 gene in HMSC cells**

| Sample | Actin | NR1H2 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 20.06 | -0.69 | 0.00 | 1.00 |
| 1pg | 20.92 | 19.87 | -1.05 | -0.36 | 1.28 |
| 100pg | 21.12 | 20.47 | -0.65 | 0.04 | 0.97 |
| 1ng | 21.04 | 21.20 | 0.16 | 0.86 | 0.55 |
| 100ng | 20.23 | 21.91 | 1.68 | 2.37 | 0.19 |



## NR1I3 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1I3 | Unkn | Control | cDNA | 27.81 | 27.15 | 27.48 |
| SYBR | NR1I3 | Unkn | 1pg | cDNA | 26.36 | 22.92 | 24.64 |
| SYBR | NR1I3 | Unkn | 100pg | cDNA | 29.28 | 25.27 | 27.27 |
| SYBR | NR1I3 | Unkn | 1ng | cDNA | 28.20 | 24.25 | 26.23 |
| SYBR | NR1I3 | Unkn | 100ng | cDNA | 23.58 | 23.52 | 23.55 |
| SYBR | NR1I3 | NTC | NTC | NTC | N/A | N/A | N/A |

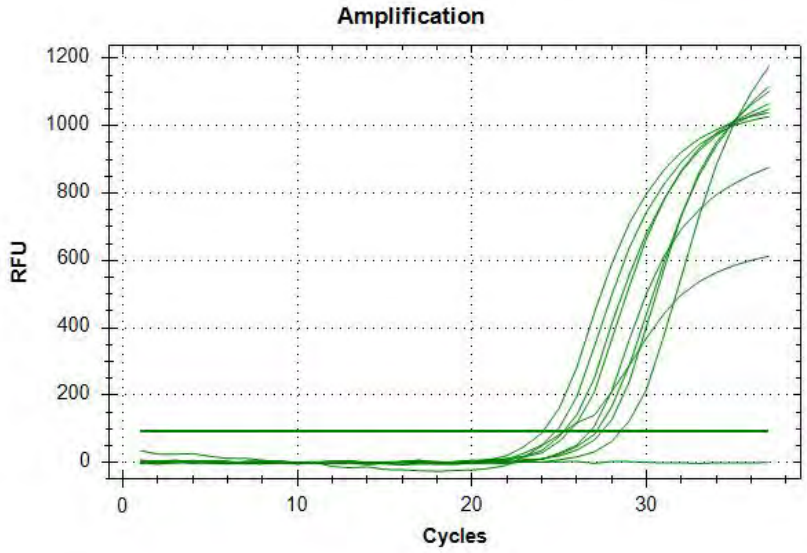



**Figure 23.1: NR1I3 Amplification curve**

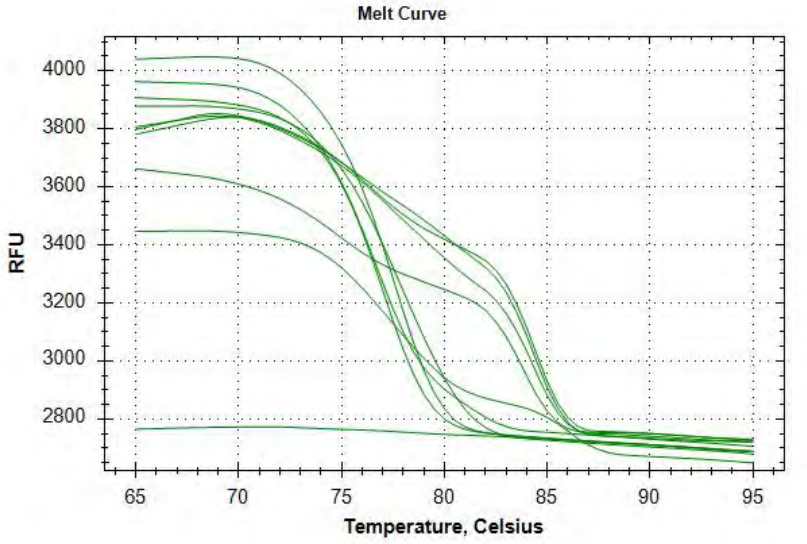



**Figure 23.2: NR1I3 melt curve**

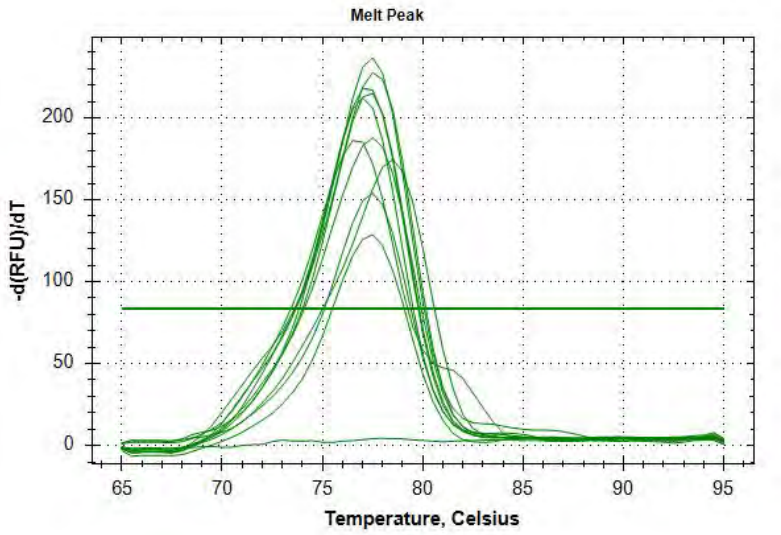
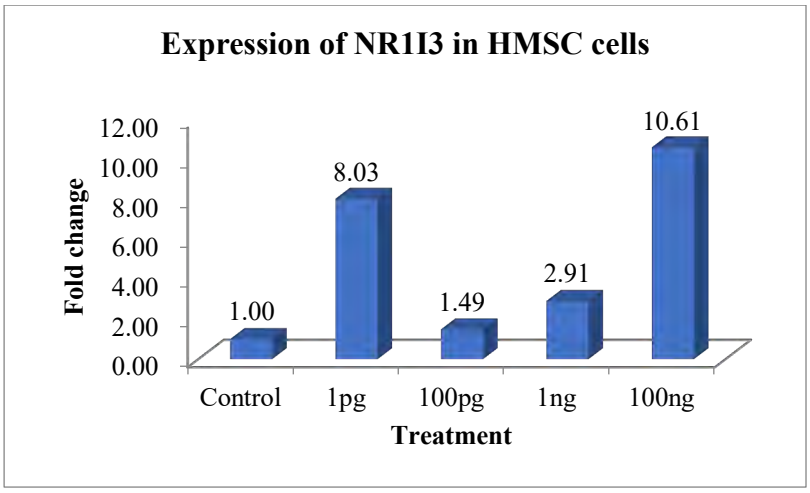



**Figure 23.3: NR1I3 melt peak**

**Table 23 and Graph 23 for relative expression of NR1I3 gene:**

| Sample | Actin | NR1I3 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 27.48 | 6.73 | 0.00 | 1.00 |
| 1pg | 20.92 | 24.64 | 3.72 | -3.01 | 8.03 |
| 100pg | 21.12 | 27.27 | 6.15 | -0.57 | 1.49 |
| 1ng | 21.04 | 26.23 | 5.19 | -1.54 | 2.91 |
| 100ng | 20.23 | 23.55 | 3.32 | -3.41 | 10.61 |



## NR2B3 Gene:

**Raw Data**

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR2B3 | Unkn | Control | cDNA | 27.13 | 27.26 | 27.19 |
| SYBR | NR2B3 | Unkn | 1pg | cDNA | 26.15 | 26.37 | 26.26 |
| SYBR | NR2B3 | Unkn | 100pg | cDNA | 26.36 | 26.48 | 26.42 |
| SYBR | NR2B3 | Unkn | 1ng | cDNA | 26.83 | 26.97 | 26.90 |
| SYBR | NR2B3 | Unkn | 100ng | cDNA | 26.31 | 27.83 | 27.07 |
| SYBR | NR2B3 | NTC | NTC | NTC | N/A | N/A | N/A |

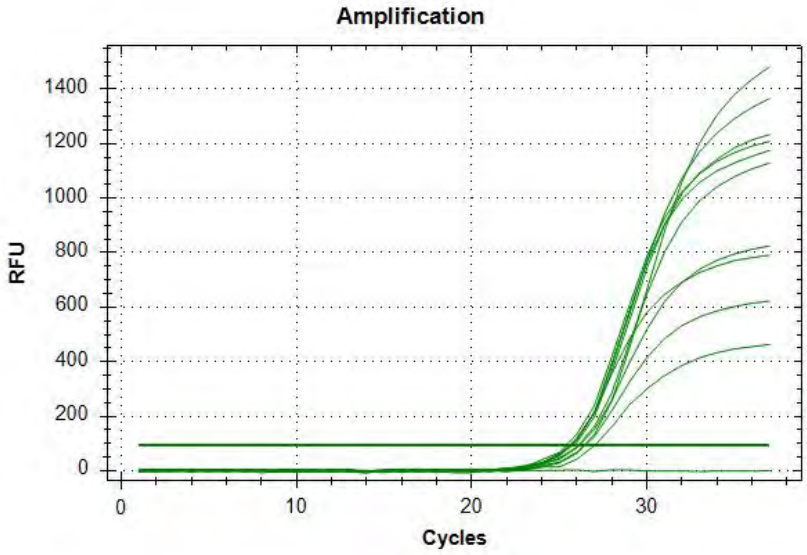



**Figure 24.1: NR2B3 Amplification curve**

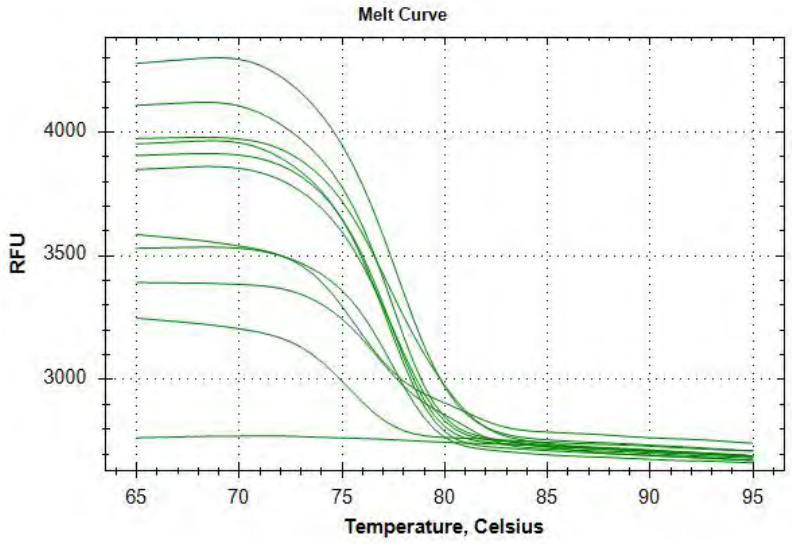



**Figure 24.2: NR2B3 melt curve**

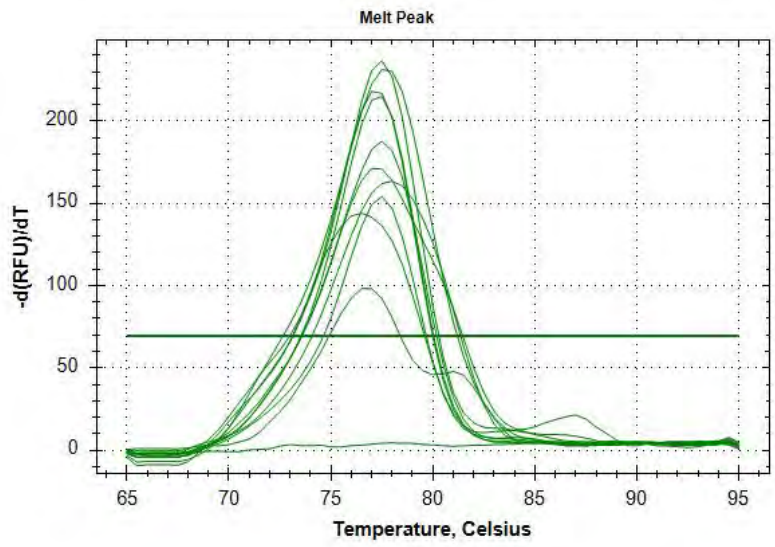
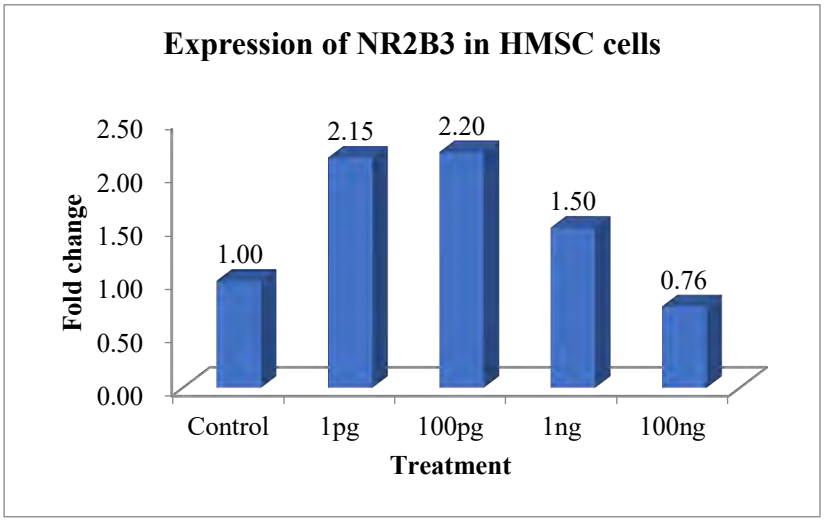



**Figure 24.3: NR2B3 melt peak**

**Table 24 and Graph 24 for relative expression of NR2B3 gene:**

| Sample | Actin | NR2B3 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 27.19 | 6.44 | 0.00 | 1.00 |
| 1pg | 20.92 | 26.26 | 5.34 | -1.11 | 2.15 |
| 100pg | 21.12 | 26.42 | 5.30 | -1.14 | 2.20 |
| 1ng | 21.04 | 26.90 | 5.86 | -0.58 | 1.50 |
| 100ng | 20.23 | 27.07 | 6.84 | 0.40 | 0.76 |



## NR3B3 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR3B3 | Unkn | Control | cDNA | 19.96 | 20.19 | 20.08 |
| SYBR | NR3B3 | Unkn | 1pg | cDNA | 19.31 | 19.41 | 19.36 |
| SYBR | NR3B3 | Unkn | 100pg | cDNA | 20.25 | 20.58 | 20.41 |
| SYBR | NR3B3 | Unkn | 1ng | cDNA | 21.13 | 21.32 | 21.23 |
| SYBR | NR3B3 | Unkn | 100ng | cDNA | 21.92 | 22.07 | 21.99 |
| SYBR | NR3B3 | NTC | NTC | NTC | N/A | N/A | N/A |

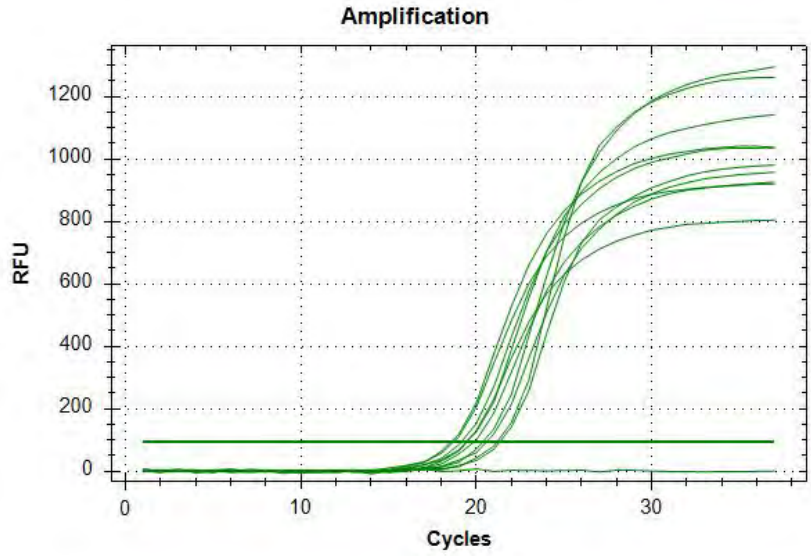



**Figure 25.1: NR3B3 Amplification curve**

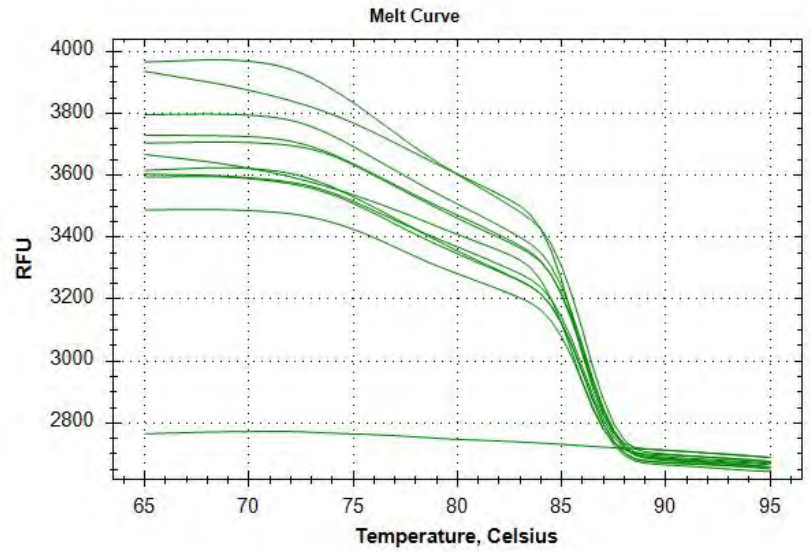


**Figure 25.2: NR3B3 melt curve**

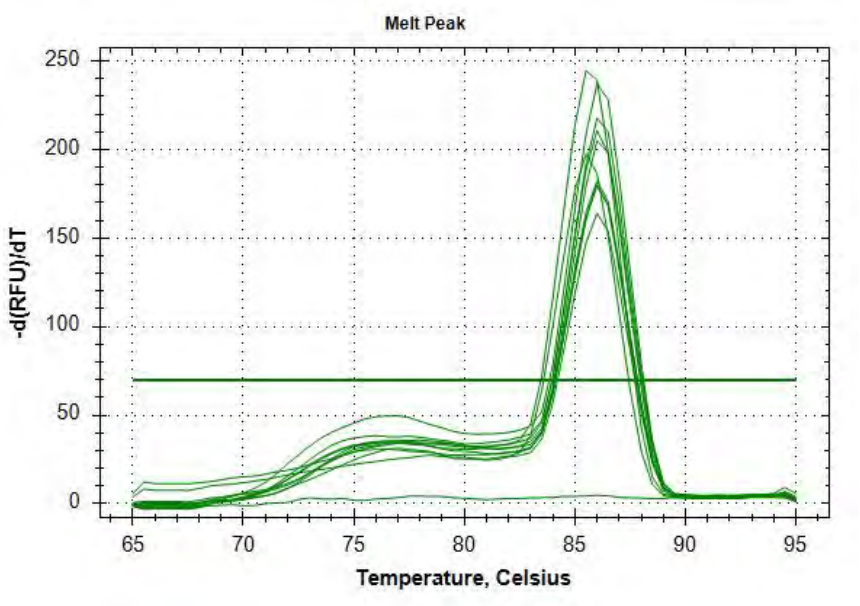
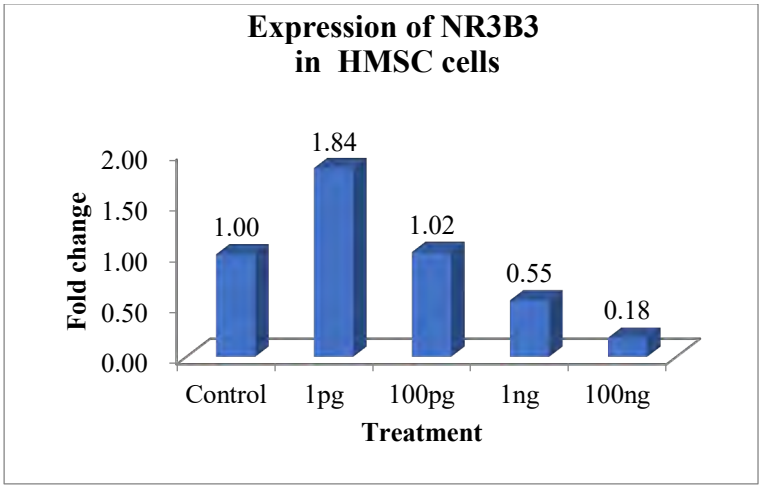



**Figure 25.3: NR3B3 melt peak**

**Table 25 and Graph 25 for relative expression of NR3B3 gene:**

| Sample | Actin | NR3B3 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 20.08 | -0.67 | 0.00 | 1.00 |
| 1pg | 20.92 | 19.36 | -1.56 | -0.88 | 1.84 |
| 100pg | 21.12 | 20.41 | -0.71 | -0.03 | 1.02 |
| 1ng | 21.04 | 21.23 | 0.19 | 0.86 | 0.55 |
| 100ng | 20.23 | 21.99 | 1.76 | 2.44 | 0.18 |



## NR5A1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR5A1 | Unkn | Control | cDNA | 30.15 | 23.98 | 27.06 |
| SYBR | NR5A1 | Unkn | 1pg | cDNA | 27.89 | 23.23 | 25.56 |
| SYBR | NR5A1 | Unkn | 100pg | cDNA | 27.94 | 24.21 | 26.07 |
| SYBR | NR5A1 | Unkn | 1ng | cDNA | 28.40 | 24.42 | 26.41 |
| SYBR | NR5A1 | Unkn | 100ng | cDNA | 24.67 | 23.72 | 24.20 |
| SYBR | NR5A1 | NTC | NTC | NTC | N/A | N/A | N/A |

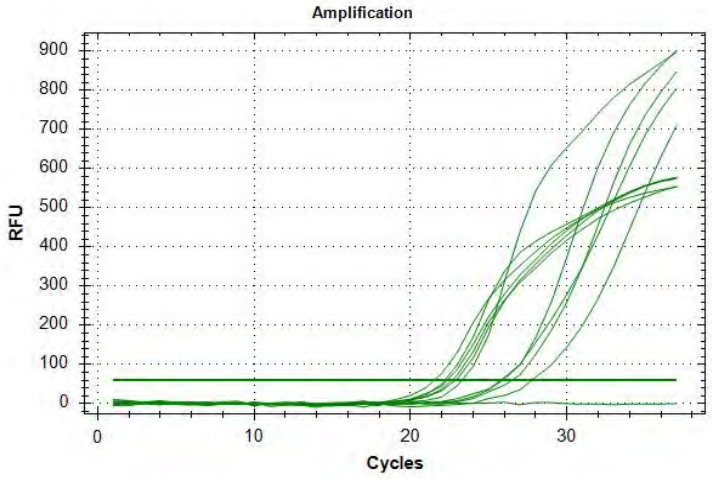



**Figure 26.1: NR5A1 Amplification curve**

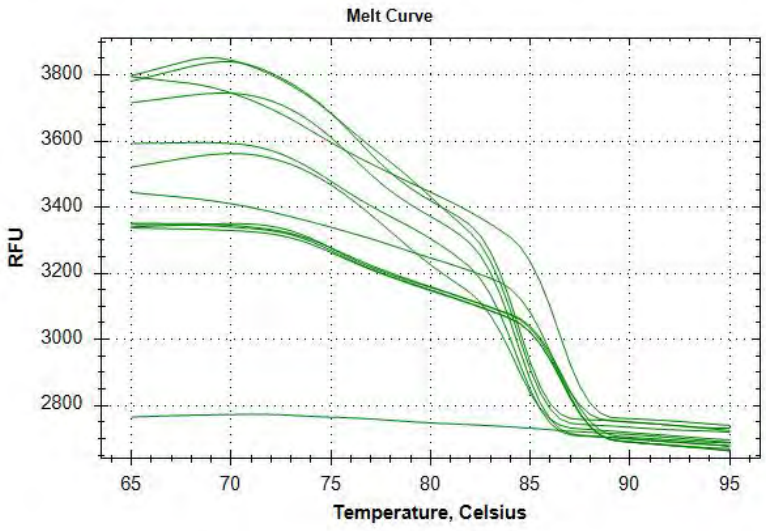



**Figure 26.2: NR5A1 melt curve**

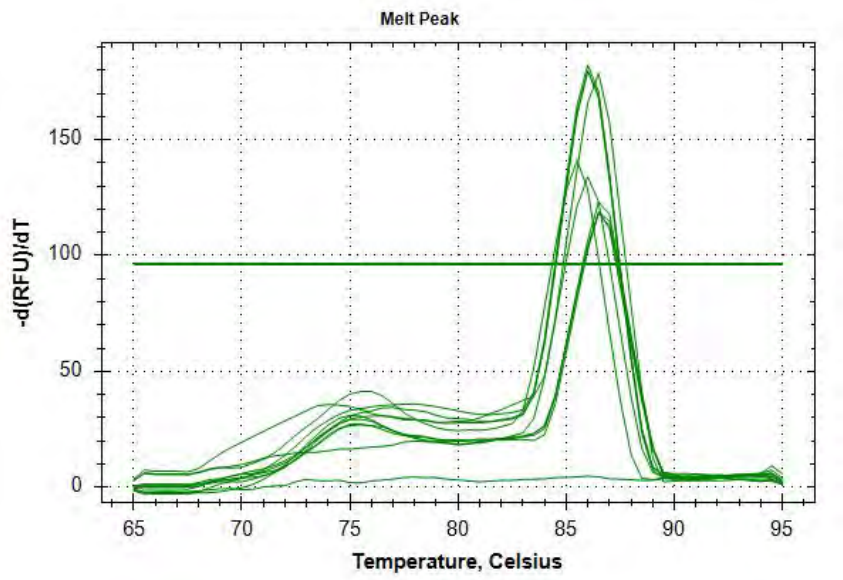
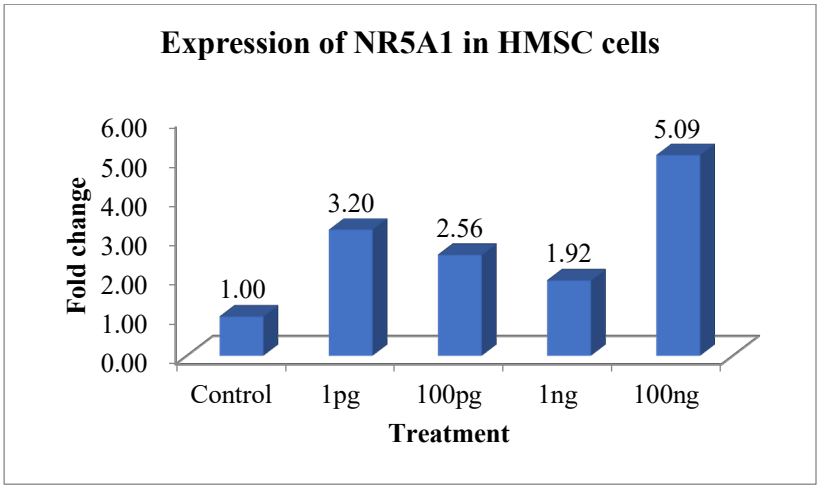



**Figure 26.3: NR5A1 melt peak**

**Table 26 and Graph 26 for relative expression of NR5A1 gene:**

| Sample | Actin | NR5A1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 27.06 | 6.31 | 0.00 | 1.00 |
| 1pg | 20.92 | 25.56 | 4.64 | -1.68 | 3.20 |
| 100pg | 21.12 | 26.07 | 4.95 | -1.36 | 2.56 |
| 1ng | 21.04 | 26.41 | 5.37 | -0.94 | 1.92 |
| 100ng | 20.23 | 24.20 | 3.97 | -2.35 | 5.09 |



## NR5A2 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR5A2 | Unkn | Control | cDNA | 20.64 | 20.45 | 20.54 |
| SYBR | NR5A2 | Unkn | 1pg | cDNA | 20.27 | 20.39 | 20.33 |
| SYBR | NR5A2 | Unkn | 100pg | cDNA | 21.22 | 21.53 | 21.38 |
| SYBR | NR5A2 | Unkn | 1ng | cDNA | 22.33 | 22.86 | 22.60 |
| SYBR | NR5A2 | Unkn | 100ng | cDNA | 22.70 | 22.81 | 22.76 |
| SYBR | NR5A2 | NTC | NTC | NTC | N/A | N/A | N/A |

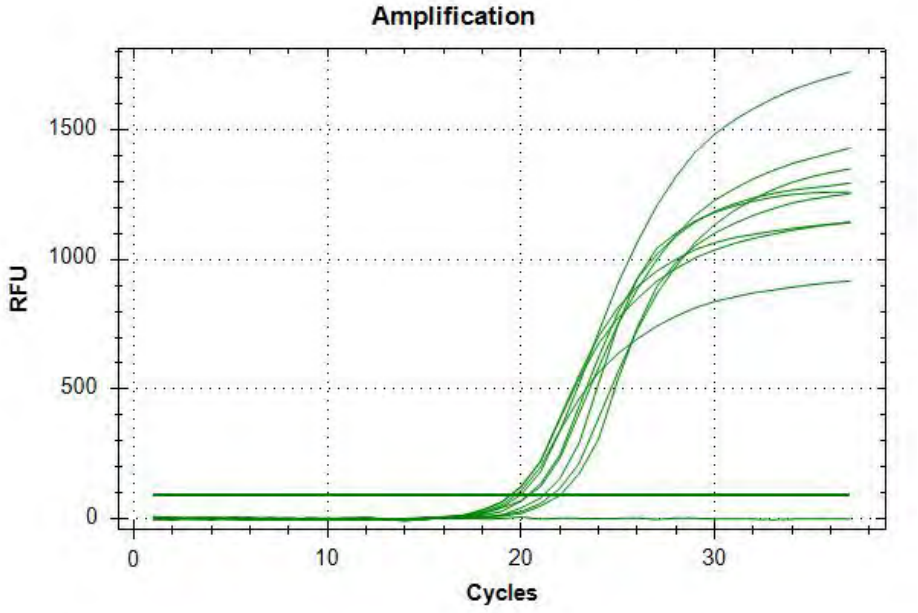



**Figure 27.1: NR5A2 Amplification curve**

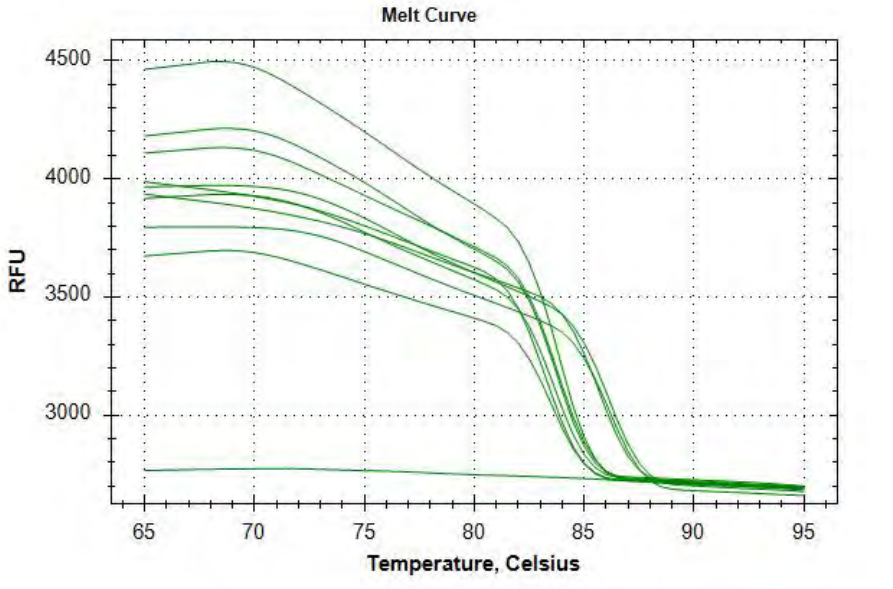


**Figure 27.2: NR5A2 melt curve**

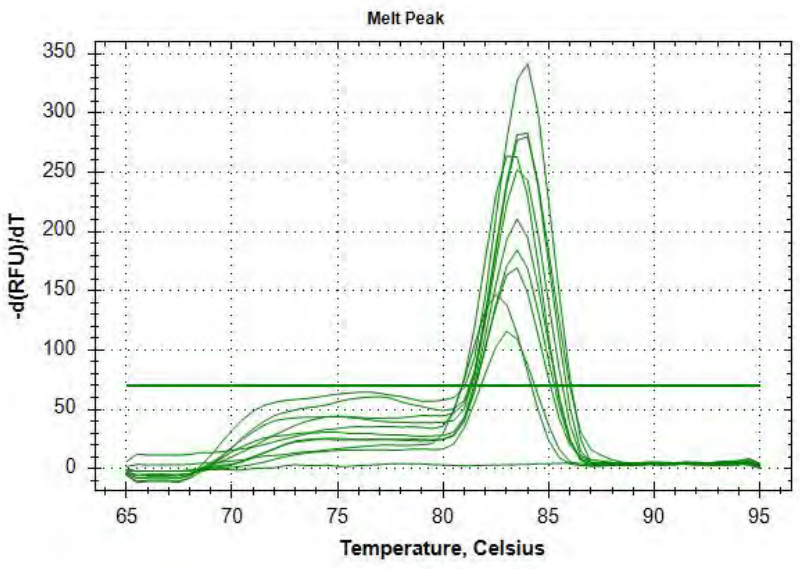
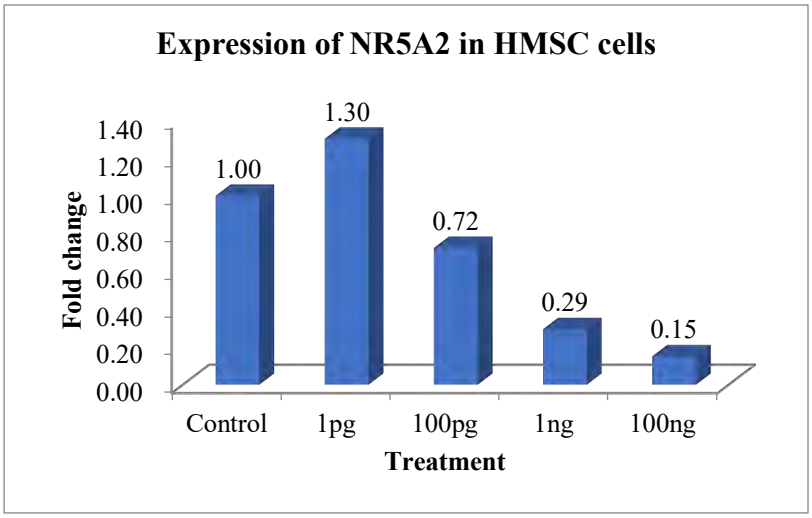



**Figure 27.3: NR5A2 melt peak**

**Table 27 and Graph 27 for relative expression of NR5A2 gene:**

| Sample | Actin | NR5A2 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 20.54 | -0.21 | 0.00 | 1.00 |
| 1pg | 20.92 | 20.33 | -0.59 | -0.38 | 1.30 |
| 100pg | 21.12 | 21.38 | 0.26 | 0.47 | 0.72 |
| 1ng | 21.04 | 22.60 | 1.56 | 1.77 | 0.29 |
| 100ng | 20.23 | 22.76 | 2.53 | 2.73 | 0.15 |



## NR6A1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR6A1 | Unkn | Control | cDNA | 25.50 | 25.46 | 25.48 |
| SYBR | NR6A1 | Unkn | 1pg | cDNA | 24.84 | 24.93 | 24.88 |
| SYBR | NR6A1 | Unkn | 100pg | cDNA | 26.64 | 25.49 | 26.07 |
| SYBR | NR6A1 | Unkn | 1ng | cDNA | 26.08 | 26.70 | 26.39 |
| SYBR | NR6A1 | Unkn | 100ng | cDNA | 27.41 | 27.90 | 27.65 |
| SYBR | NR6A1 | NTC | NTC | NTC | N/A | N/A | N/A |

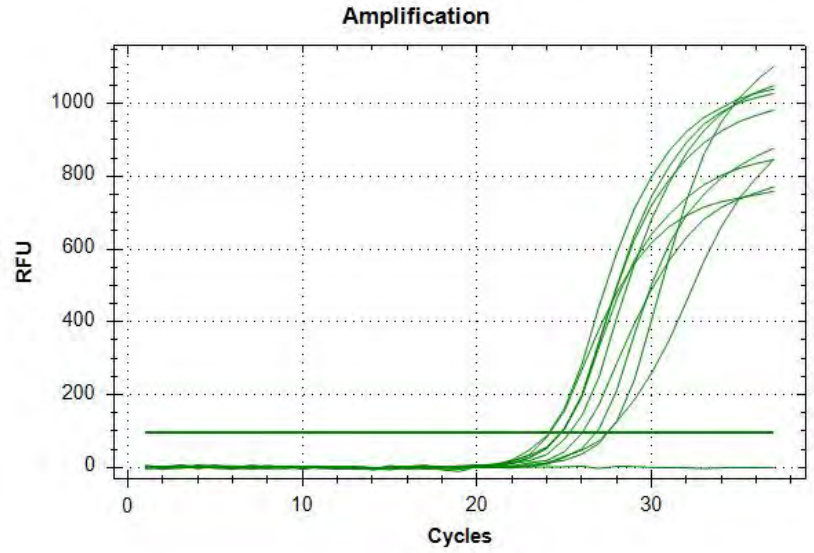



**Figure 28.1: NR6A1 Amplification curve**

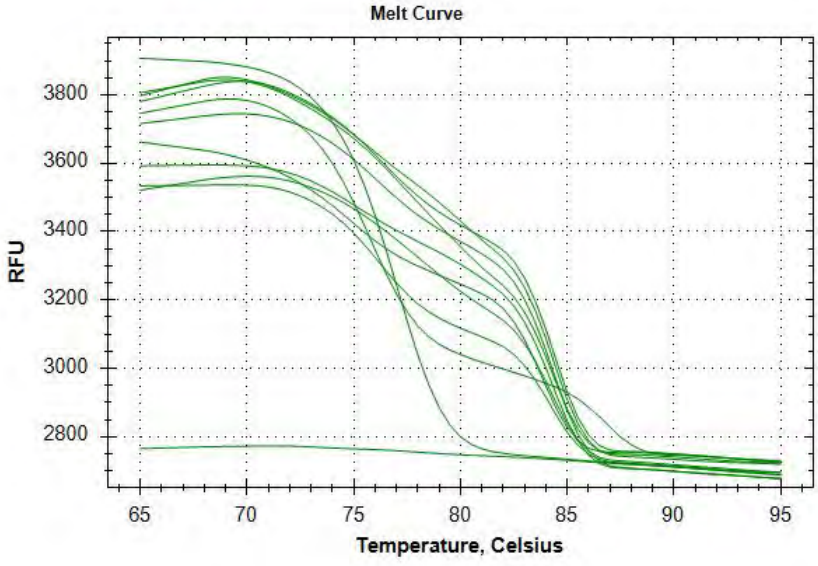



**Figure 28.2: NR6A1 melt curve**

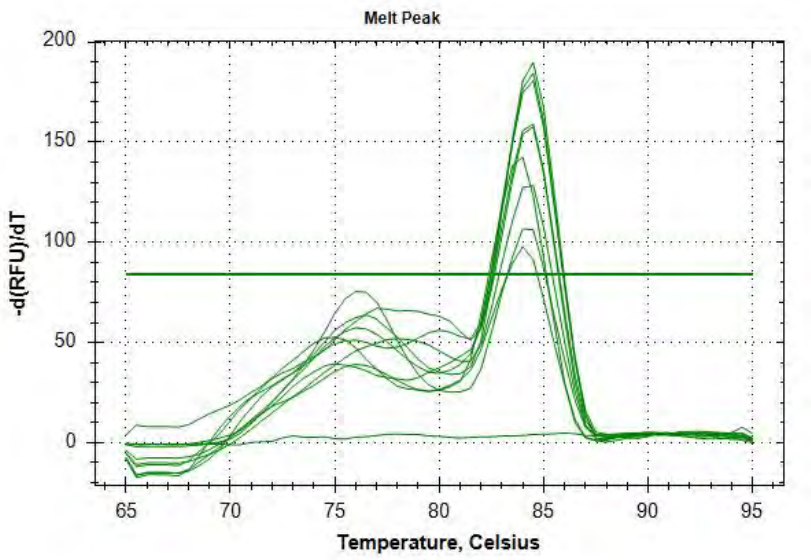
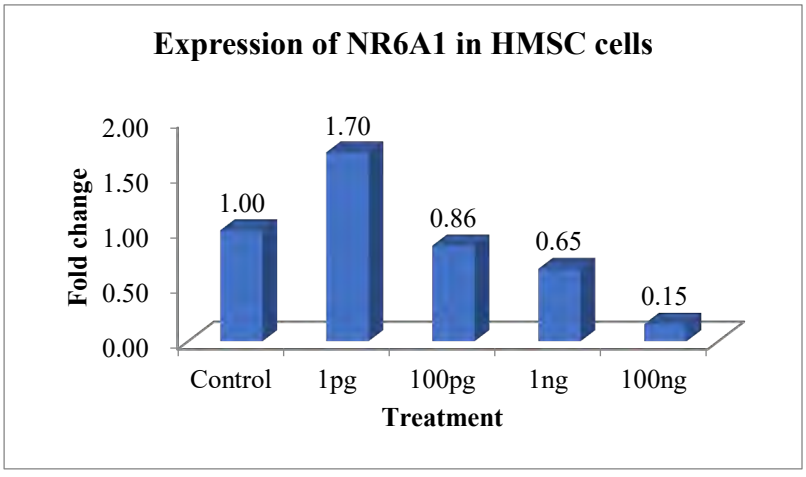



**Figure 28.3: NR6A1 melt peak**

**Table 28 and Graph 28 for relative expression of NR6A1 gene:**

| Sample | Actin | NR6A1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 25.48 | 4.73 | 0.00 | 1.00 |
| 1pg | 20.92 | 24.88 | 3.96 | -0.77 | 1.70 |
| 100pg | 21.12 | 26.07 | 4.95 | 0.22 | 0.86 |
| 1ng | 21.04 | 26.39 | 5.35 | 0.62 | 0.65 |
| 100ng | 20.23 | 27.65 | 7.42 | 2.69 | 0.15 |



## NR2A2 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR2A2 | Unkn | Control | cDNA | 28.18 | 30.26 | 29.22 |
| SYBR | NR2A2 | Unkn | 1pg | cDNA | 28.79 | 29.03 | 28.91 |
| SYBR | NR2A2 | Unkn | 100pg | cDNA | 28.37 | 29.63 | 29.00 |
| SYBR | NR2A2 | Unkn | 1ng | cDNA | 31.11 | 30.90 | 31.00 |
| SYBR | NR2A2 | Unkn | 100ng | cDNA | 30.27 | 31.00 | 30.64 |
| SYBR | NR2A2 | NTC | NTC | NTC | N/A | N/A | N/A |

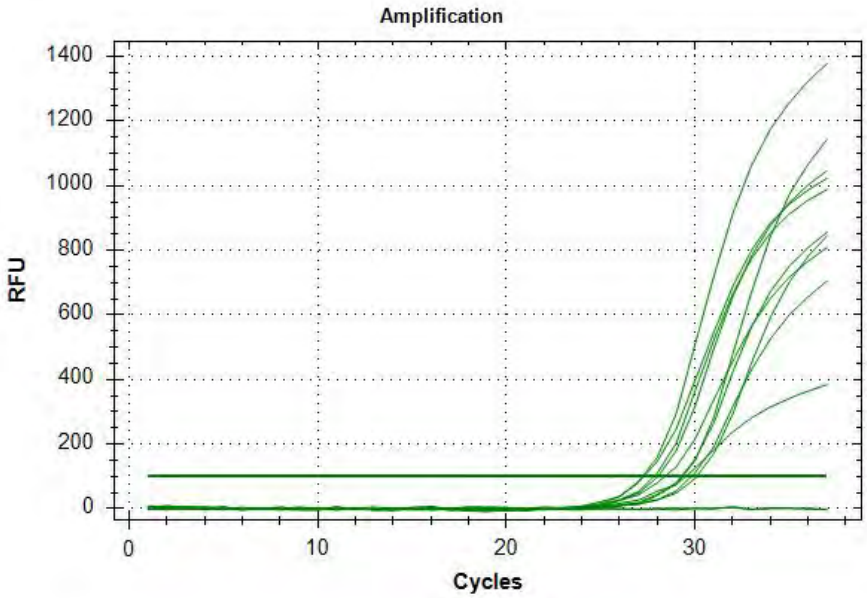



**Figure 29.1: NR2A2 Amplification curve**

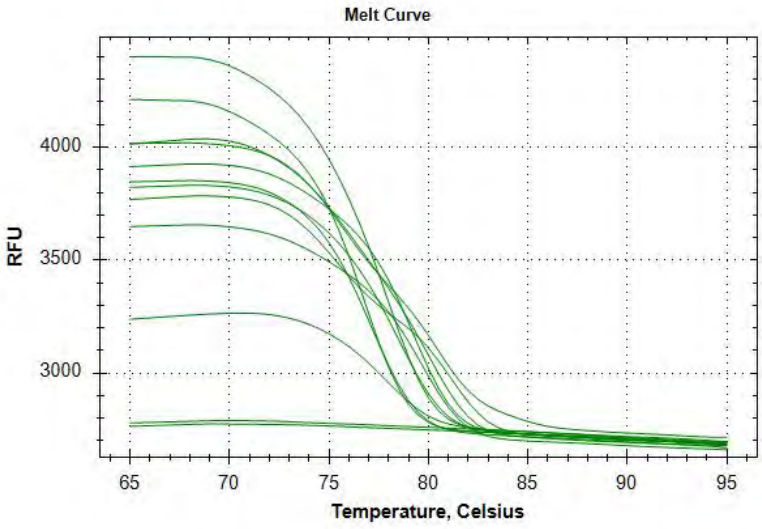



**Figure 29.2: NR2A2 melt curve**

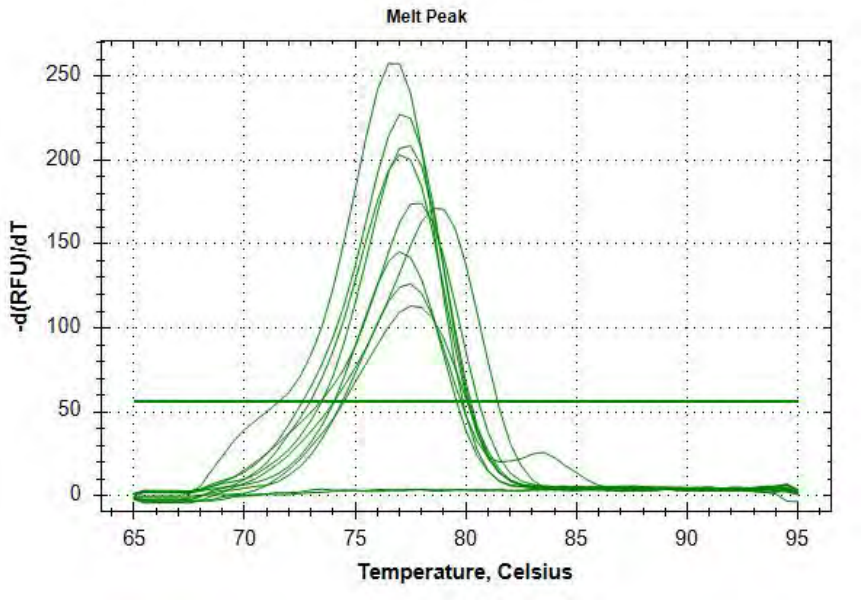
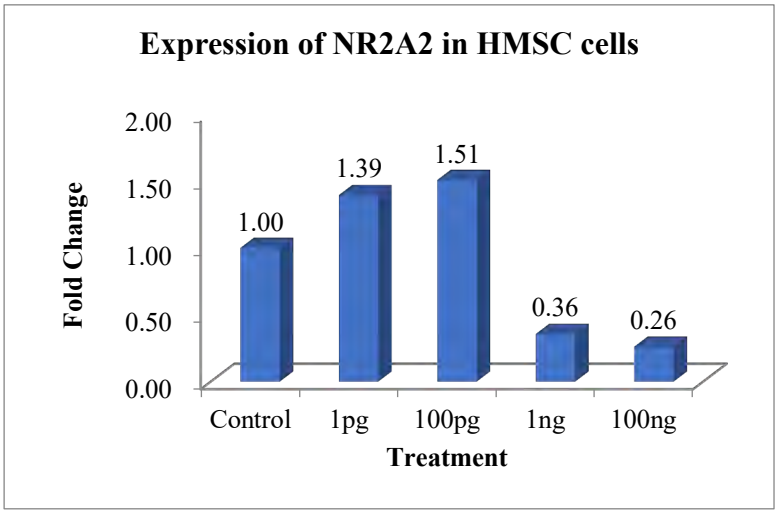



**Figure 29.3: NR2A2 melt peak**

**Table 29 and Graph 29 for relative expression of NR2A2 gene:**

| Sample | Actin | NR2A2 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 29.22 | 8.47 | 0.00 | 1.00 |
| 1pg | 20.92 | 28.91 | 7.99 | -0.48 | 1.39 |
| 100pg | 21.12 | 29.00 | 7.88 | -0.59 | 1.51 |
| 1ng | 21.04 | 31.00 | 9.96 | 1.49 | 0.36 |
| 100ng | 20.23 | 30.64 | 10.41 | 1.94 | 0.26 |



## NR2F1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR2F1 | Unkn | Control | cDNA | 20.83 | 21.25 | 21.04 |
| SYBR | NR2F1 | Unkn | 1pg | cDNA | 20.16 | 20.59 | 20.38 |
| SYBR | NR2F1 | Unkn | 100pg | cDNA | 20.61 | 20.90 | 20.75 |
| SYBR | NR2F1 | Unkn | 1ng | cDNA | 21.15 | 21.39 | 21.27 |
| SYBR | NR2F1 | Unkn | 100ng | cDNA | 20.83 | 21.45 | 21.14 |
| SYBR | NR2F1 | NTC | NTC | NTC | N/A | N/A | N/A |

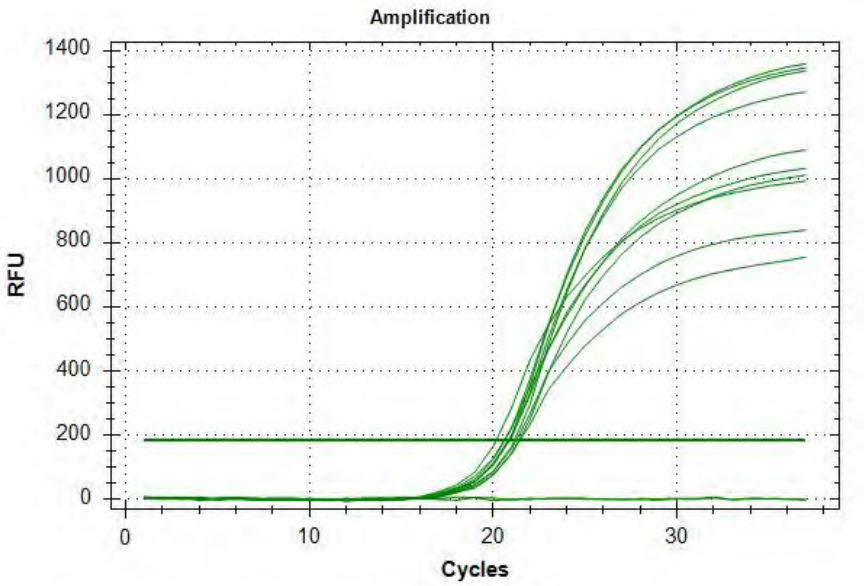



**Figure 30.1: NR2F1 Amplification curve**

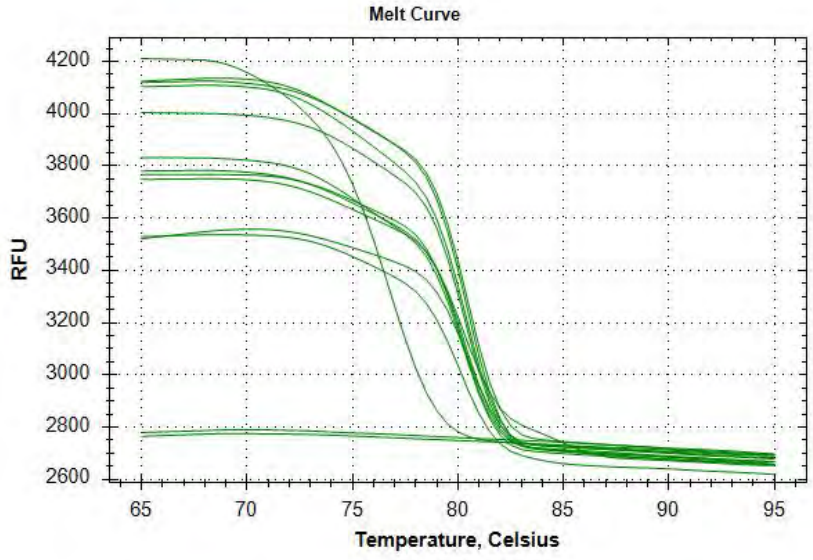


**Figure 30.2: NR2F1 melt curve**

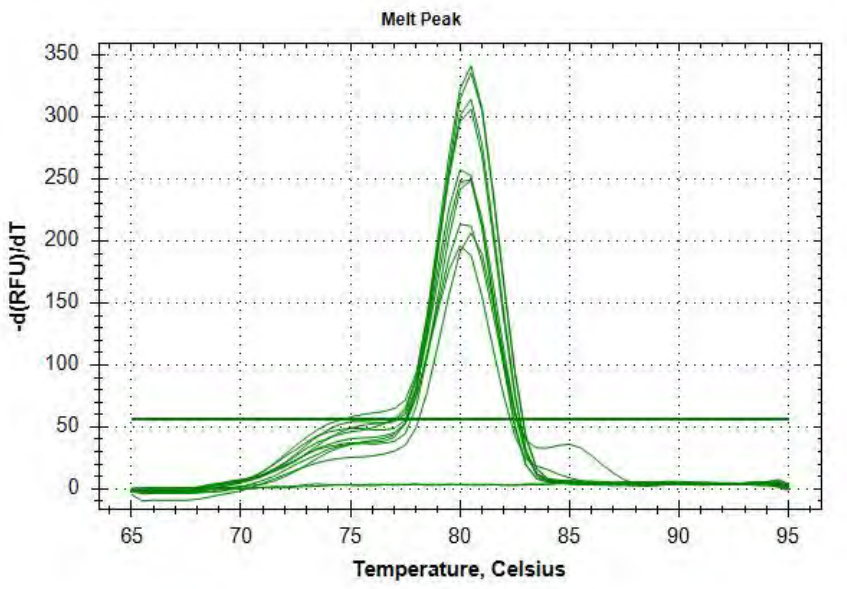
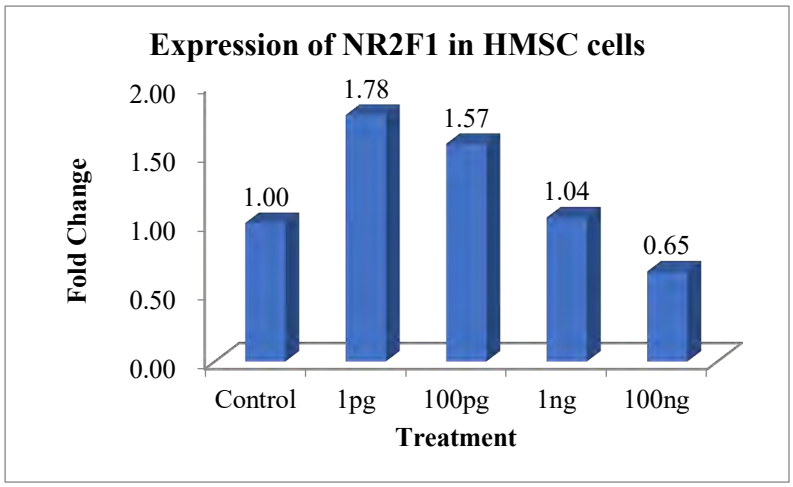



**Figure 30.3: NR2F1 melt peak**

**Table 30 and Graph 30 for relative expression of NR2F1 gene:**

| Sample | Actin | NR2F1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 21.04 | 0.29 | 0.00 | 1.00 |
| 1pg | 20.92 | 20.38 | -0.54 | -0.83 | 1.78 |
| 100pg | 21.12 | 20.75 | -0.37 | -0.65 | 1.57 |
| 1ng | 21.04 | 21.27 | 0.23 | -0.06 | 1.04 |
| 100ng | 20.23 | 21.14 | 0.91 | 0.62 | 0.65 |



## NR2F2 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR2F2 | Unkn | Control | cDNA | 17.29 | 16.87 | 17.08 |
| SYBR | NR2F2 | Unkn | 1pg | cDNA | 16.57 | 16.23 | 16.40 |
| SYBR | NR2F2 | Unkn | 100pg | cDNA | 17.24 | 16.54 | 16.89 |
| SYBR | NR2F2 | Unkn | 1ng | cDNA | 17.13 | 17.22 | 17.17 |
| SYBR | NR2F2 | Unkn | 100ng | cDNA | 16.37 | 16.56 | 16.46 |
| SYBR | NR2F2 | NTC | NTC | NTC | N/A | N/A | N/A |

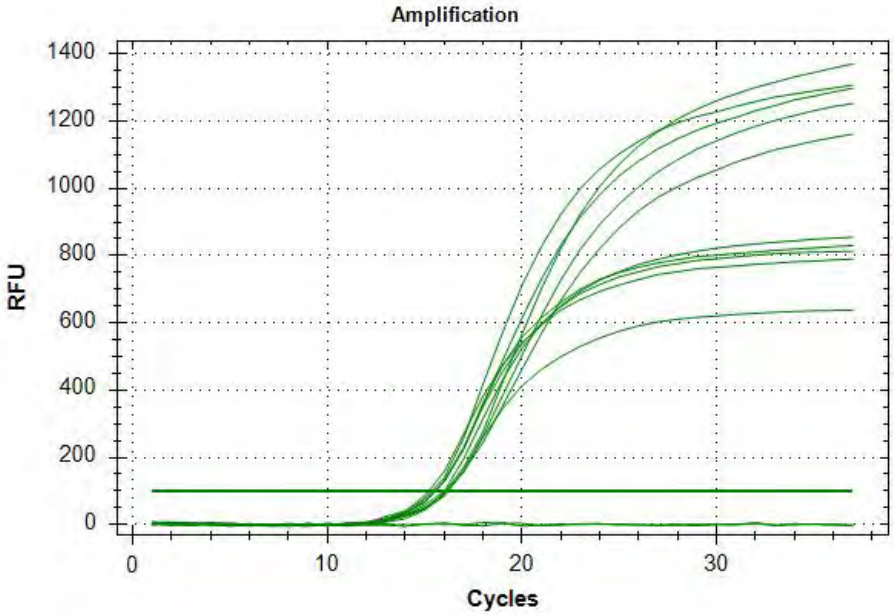



**Figure 31.1: NR2F2 Amplification curve**

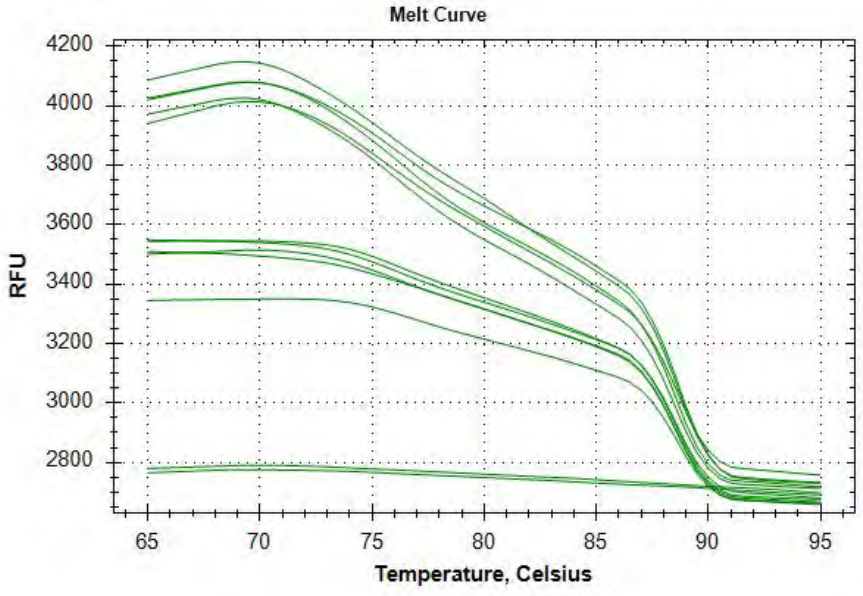


**Figure 31.2: NR2F2 melt curve**

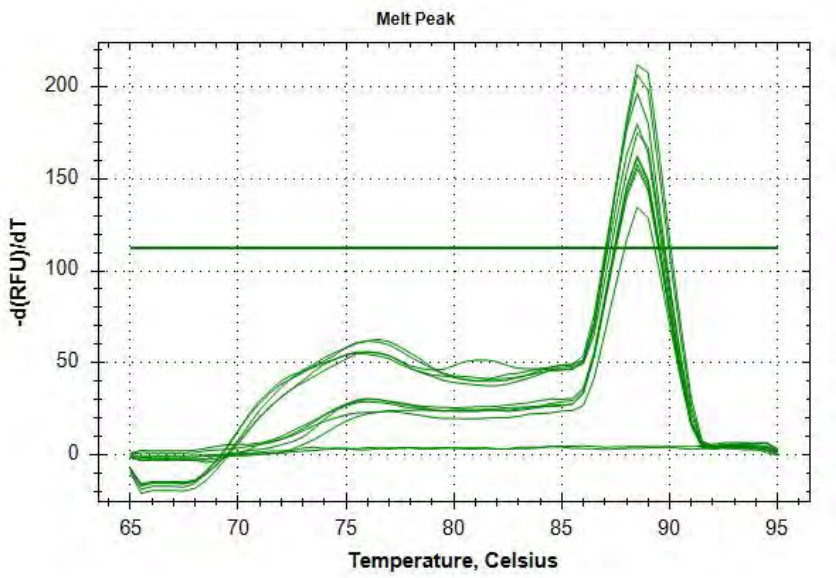
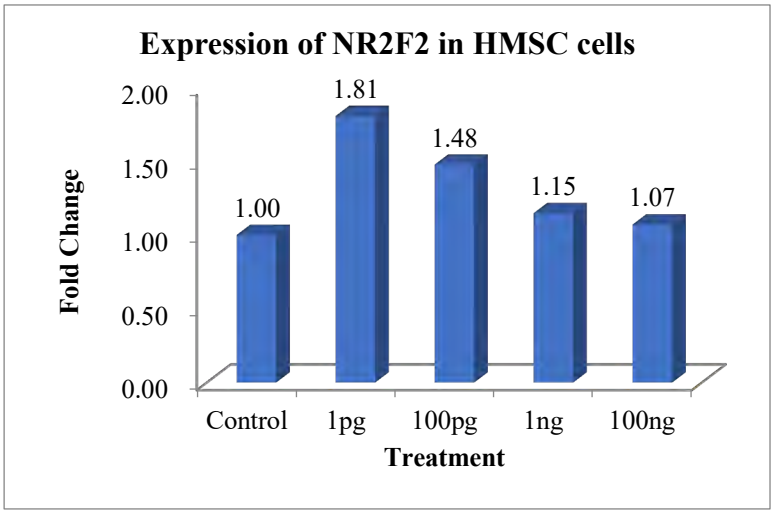



**Figure 31.3: NR2F2 melt peak**

**Table 31 and Graph 31 for relative expression of NR2F2 gene:**

| Sample | Actin | NR2F2 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 17.08 | -3.67 | 0.00 | 1.00 |
| 1pg | 20.92 | 16.40 | -4.52 | -0.85 | 1.81 |
| 100pg | 21.12 | 16.89 | -4.23 | -0.56 | 1.48 |
| 1ng | 21.04 | 17.17 | -3.87 | -0.20 | 1.15 |
| 100ng | 20.23 | 16.46 | -3.77 | -0.10 | 1.07 |



## NR3A1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR3A1 | Unkn | Control | cDNA | 30.47 | 30.79 | 30.63 |
| SYBR | NR3A1 | Unkn | 1pg | cDNA | 30.27 | 29.54 | 29.90 |
| SYBR | NR3A1 | Unkn | 100pg | cDNA | 29.81 | 31.74 | 30.78 |
| SYBR | NR3A1 | Unkn | 1ng | cDNA | 29.67 | 30.26 | 29.97 |
| SYBR | NR3A1 | Unkn | 100ng | cDNA | 32.03 | 30.87 | 31.45 |
| SYBR | NR3A1 | NTC | NTC | NTC | N/A | N/A | N/A |

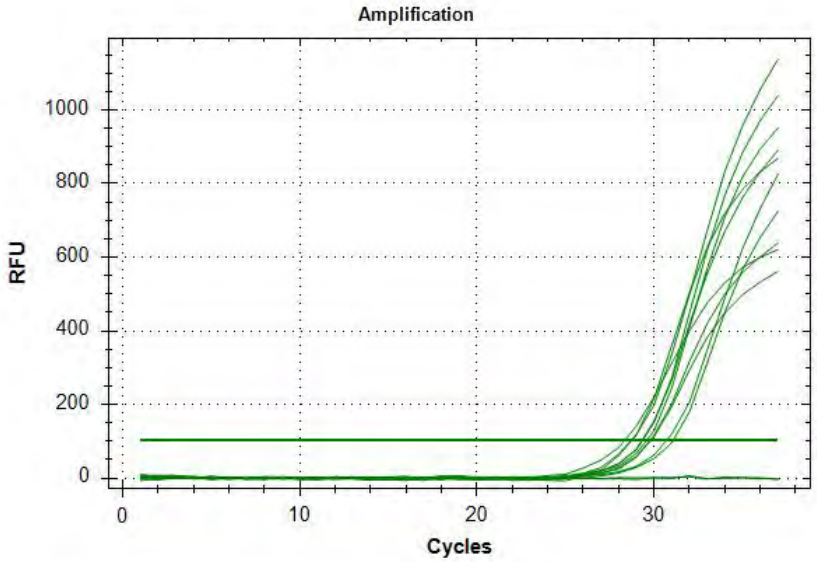



**Figure 32.1: NR3A1 Amplification curve**

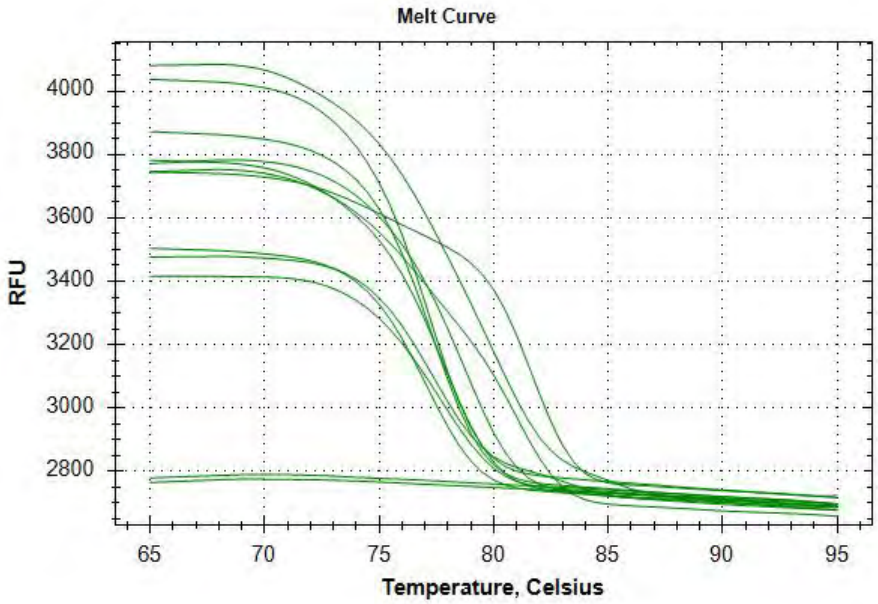



**Figure 32.2: NR3A1 melt curve**

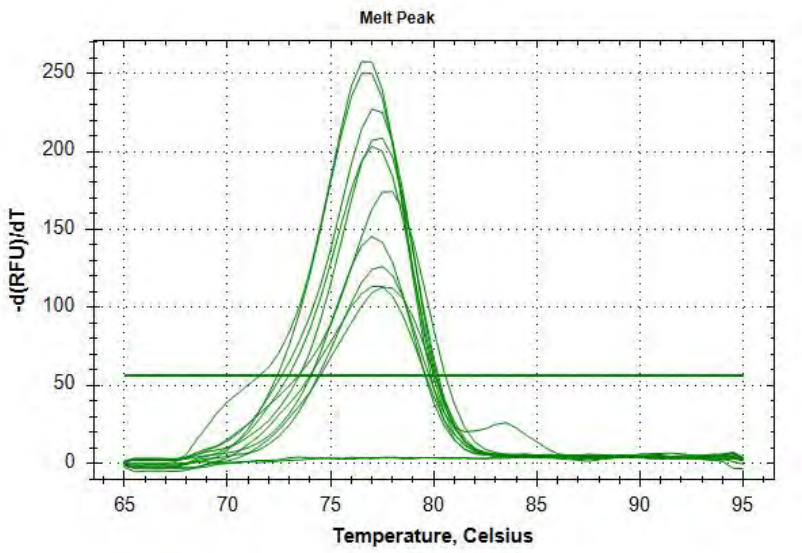
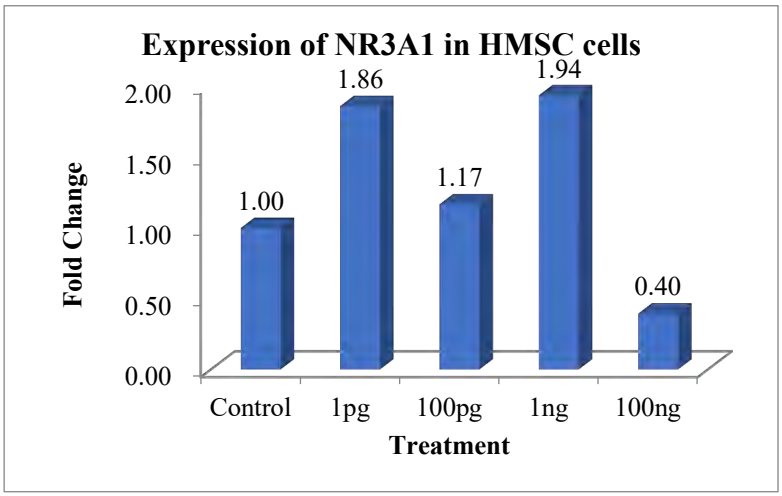



**Figure 32.3: NR3A1 melt peak**

**Table 32 and Graph 32 for relative expression of NR3A1 gene:**

| Sample | Actin | NR3A1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 30.63 | 9.88 | 0.00 | 1.00 |
| 1pg | 20.92 | 29.90 | 8.98 | -0.90 | 1.86 |
| 100pg | 21.12 | 30.78 | 9.66 | -0.22 | 1.17 |
| 1ng | 21.04 | 29.97 | 8.93 | -0.95 | 1.94 |
| 100ng | 20.23 | 31.45 | 11.22 | 1.34 | 0.40 |



## NR3B1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR3B1 | Unkn | Control | cDNA | 22.72 | 23.05 | 22.89 |
| SYBR | NR3B1 | Unkn | 1pg | cDNA | 22.41 | 23.72 | 23.06 |
| SYBR | NR3B1 | Unkn | 100pg | cDNA | 23.40 | 23.50 | 23.45 |
| SYBR | NR3B1 | Unkn | 1ng | cDNA | 24.68 | 23.20 | 23.94 |
| SYBR | NR3B1 | Unkn | 100ng | cDNA | 24.39 | 23.39 | 23.89 |
| SYBR | NR3B1 | NTC | NTC | NTC | N/A | N/A | N/A |

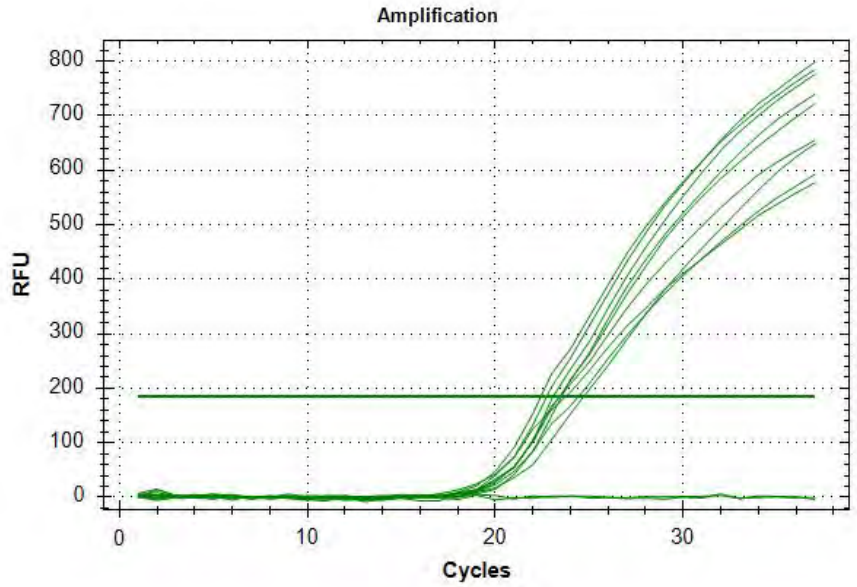



**Figure 33.1: NR3B1 Amplification curve**

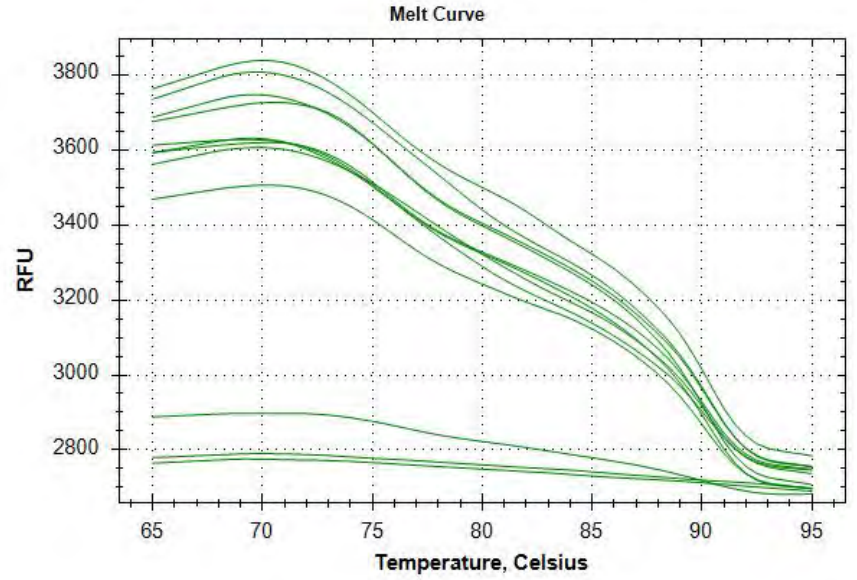


**Figure 33.2: NR3B1 melt curve**

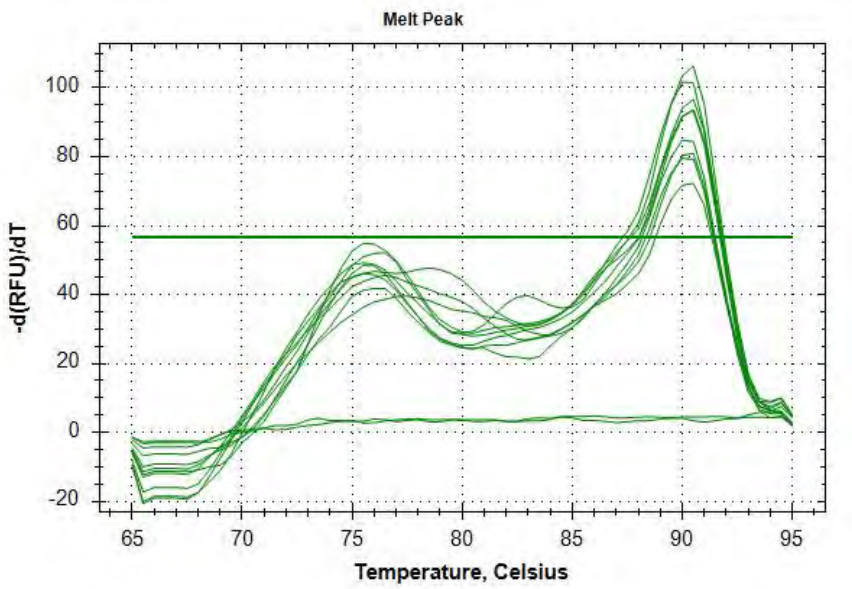
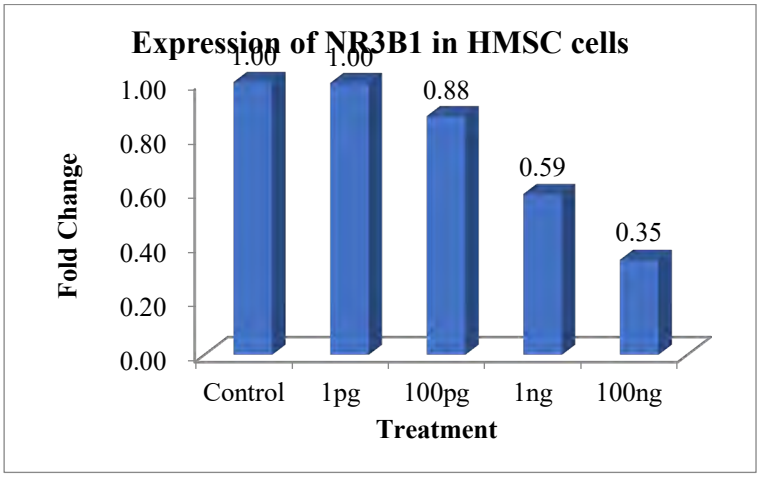



**Figure 33.3: NR3B1 melt peak**

**Table 33 and Graph 33 for relative expression of NR3B1 gene:**

| Sample | Actin | NR3B1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 22.89 | 2.14 | 0.00 | 1.00 |
| 1pg | 20.92 | 23.06 | 2.14 | 0.01 | 1.00 |
| 100pg | 21.12 | 23.45 | 2.33 | 0.19 | 0.88 |
| 1ng | 21.04 | 23.94 | 2.90 | 0.76 | 0.59 |
| 100ng | 20.23 | 23.89 | 3.66 | 1.52 | 0.35 |



## NR4A2 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR4A2 | Unkn | Control | cDNA | 21.27 | 21.72 | 21.49 |
| SYBR | NR4A2 | Unkn | 1pg | cDNA | 21.31 | 21.85 | 21.58 |
| SYBR | NR4A2 | Unkn | 100pg | cDNA | 22.21 | 22.96 | 22.59 |
| SYBR | NR4A2 | Unkn | 1ng | cDNA | 22.91 | 22.95 | 22.93 |
| SYBR | NR4A2 | Unkn | 100ng | cDNA | 30.07 | 28.70 | 29.39 |
| SYBR | NR4A2 | NTC | NTC | NTC | N/A | N/A | N/A |

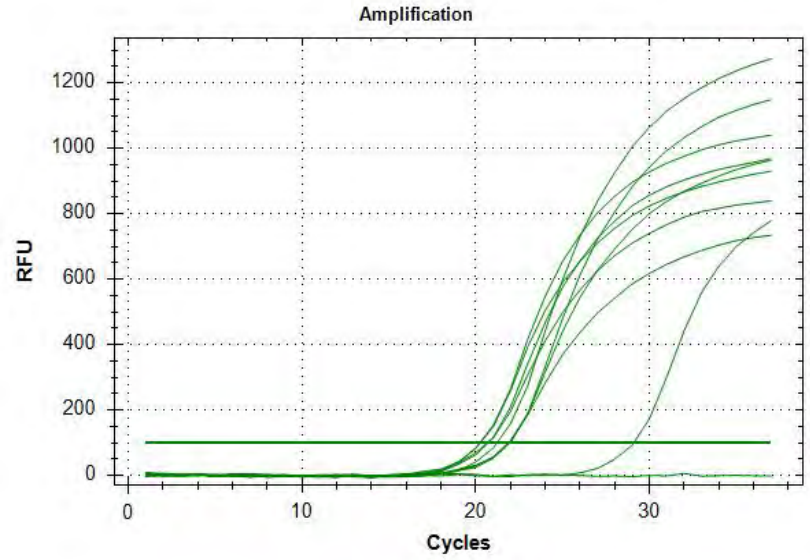



**Figure 34.1: NR4A2 Amplification curve**

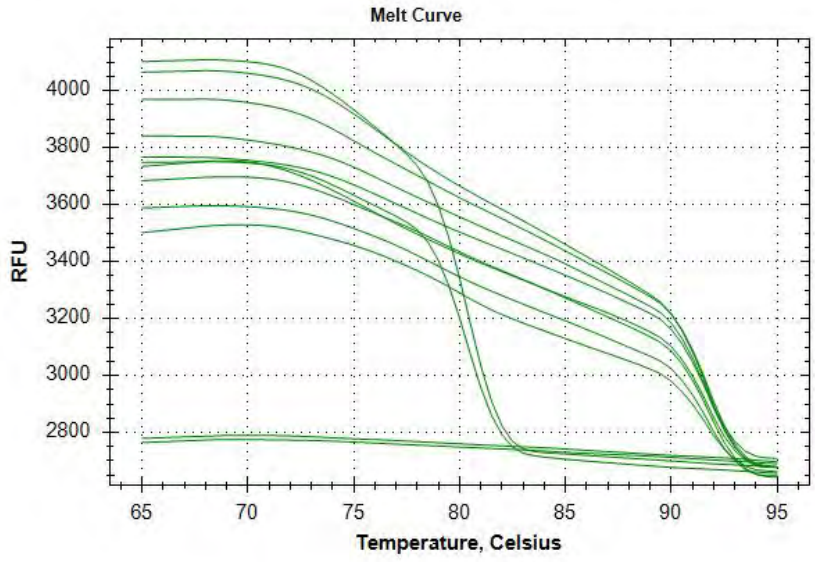



**Figure 34.2: NR4A2 melt curve**

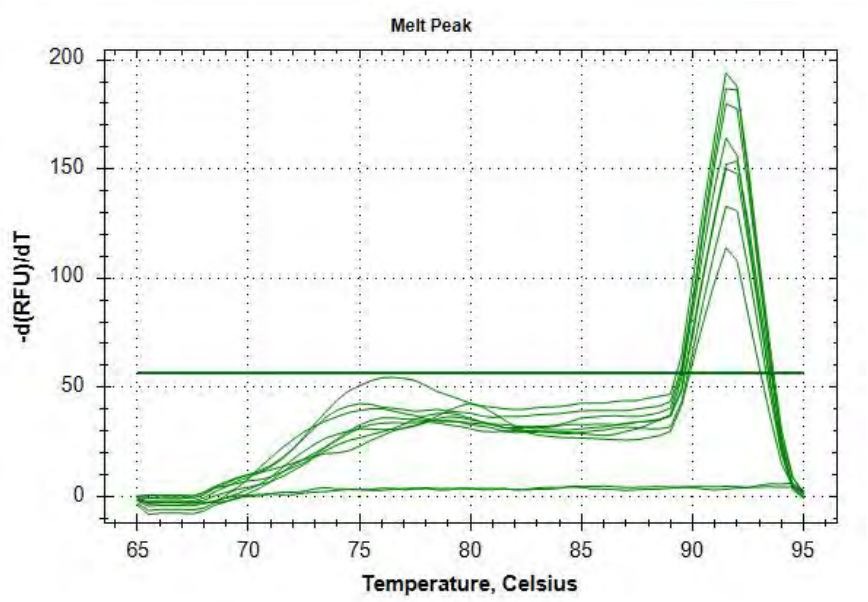
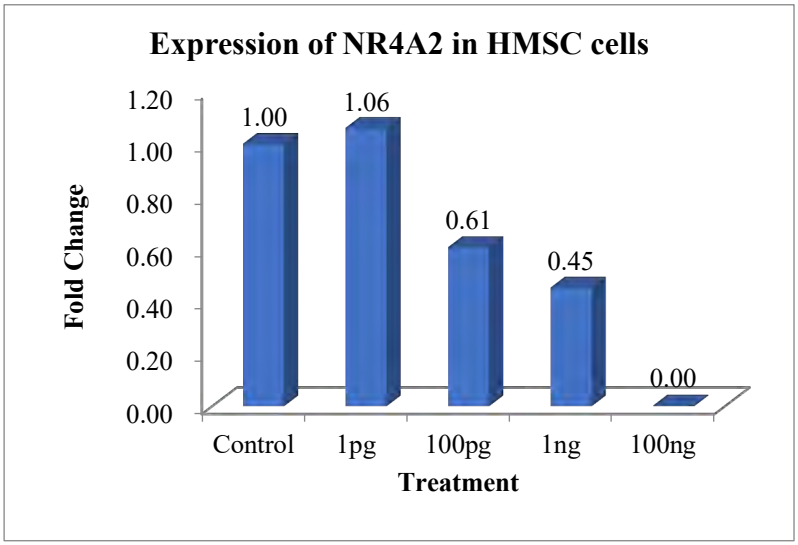



**Figure 34.3: NR4A2 melt peak**

**Table 34 and Graph 34 for relative expression of NR4A2 gene in HMSC cells**

| Sample | Actin | NR4A2 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 21.49 | 0.74 | 0.00 | 1.00 |
| 1pg | 20.92 | 21.58 | 0.66 | -0.08 | 1.06 |
| 100pg | 21.12 | 22.59 | 1.47 | 0.72 | 0.61 |
| 1ng | 21.04 | 22.93 | 1.89 | 1.14 | 0.45 |
| 100ng | 20.23 | 29.39 | 9.16 | 8.41 | 0.00 |



## NR1F2 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1F2 | Unkn | Control | cDNA | 21.72 | 23.05 | 22.39 |
| SYBR | NR1F2 | Unkn | 1pg | cDNA | 22.00 | 23.72 | 22.86 |
| SYBR | NR1F2 | Unkn | 100pg | cDNA | 22.50 | 23.50 | 23.00 |
| SYBR | NR1F2 | Unkn | 1ng | cDNA | 23.20 | 23.20 | 23.20 |
| SYBR | NR1F2 | Unkn | 100ng | cDNA | 23.50 | 23.39 | 23.45 |
| SYBR | NR1F2 | NTC | NTC | NTC | N/A | N/A | N/A |

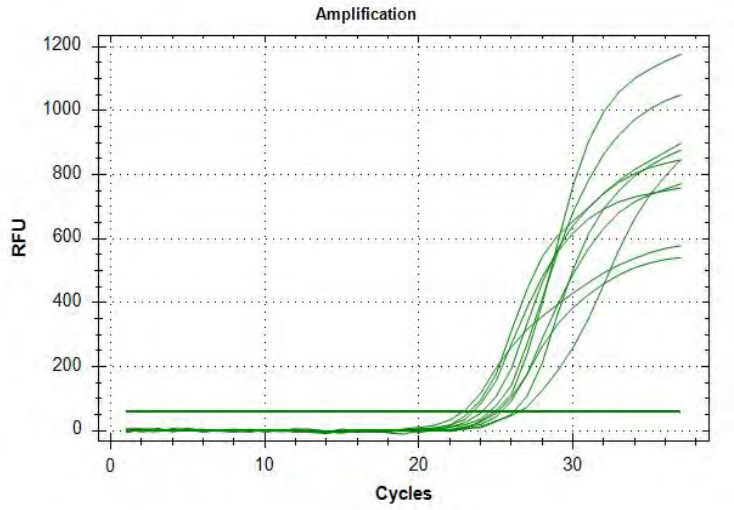



**Figure 35.1: NR1F2 Amplification curve**

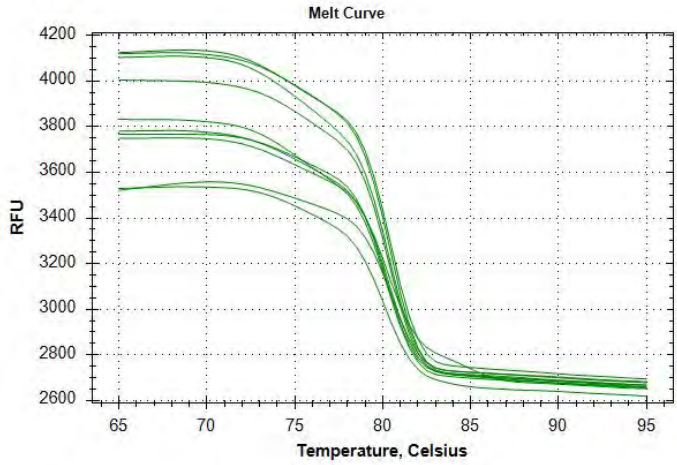



**Figure 35.2: NR1F2 melt curve**

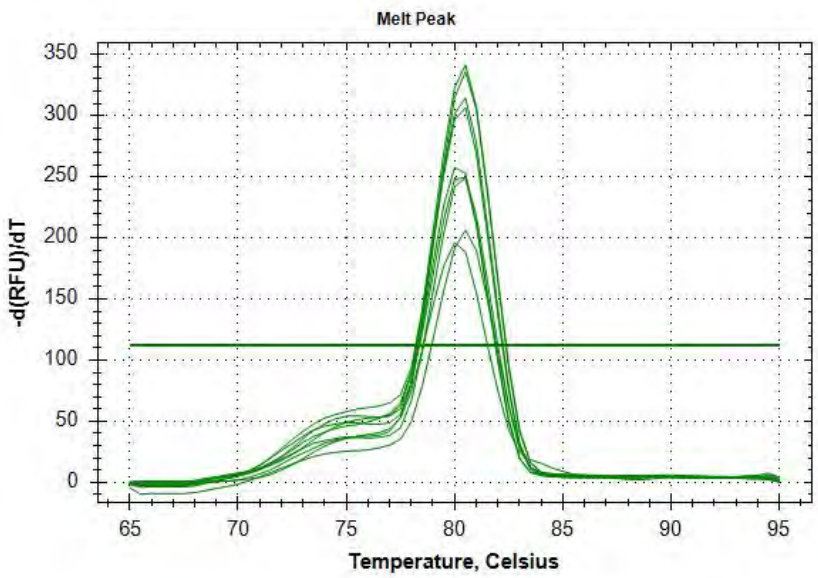
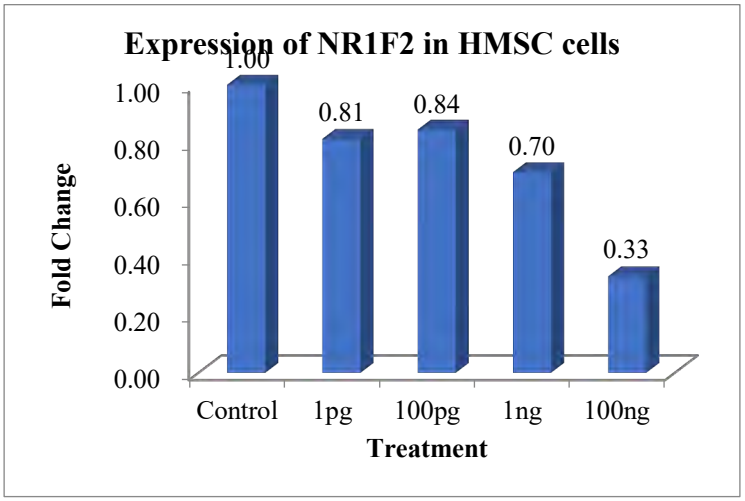



**Figure 35.3: NR1F2 melt peak**

**Table 35 and Graph 35 for relative expression of NR1F2 gene:**

| Sample | Actin | NR1F2 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 22.39 | 1.64 | 0.00 | 1.00 |
| 1pg | 20.92 | 22.86 | 1.94 | 0.30 | 0.81 |
| 100pg | 21.12 | 23.00 | 1.88 | 0.24 | 0.84 |
| 1ng | 21.04 | 23.20 | 2.16 | 0.52 | 0.70 |
| 100ng | 20.23 | 23.45 | 3.22 | 1.58 | 0.33 |



## NR1C1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1C1 | Unkn | Control | cDNA | 26.18 | 20.89 | 23.54 |
| SYBR | NR1C1 | Unkn | 1pg | cDNA | 23.92 | 20.73 | 22.32 |
| SYBR | NR1C1 | Unkn | 100pg | cDNA | 23.45 | 20.84 | 22.15 |
| SYBR | NR1C1 | Unkn | 1ng | cDNA | 22.52 | 21.37 | 21.95 |
| SYBR | NR1C1 | Unkn | 100ng | cDNA | 24.25 | 23.29 | 23.77 |
| SYBR | NR1C1 | NTC | NTC | NTC | N/A | N/A | N/A |

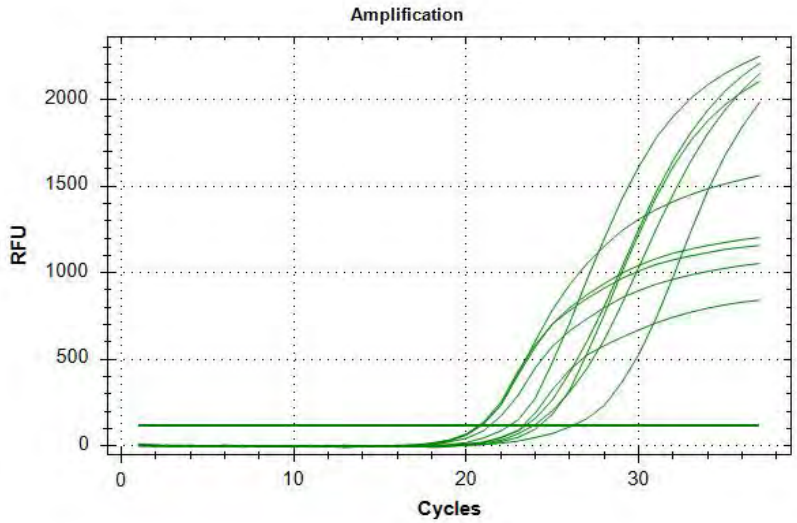



**Figure 36.1: NR1C1 Amplification curve**

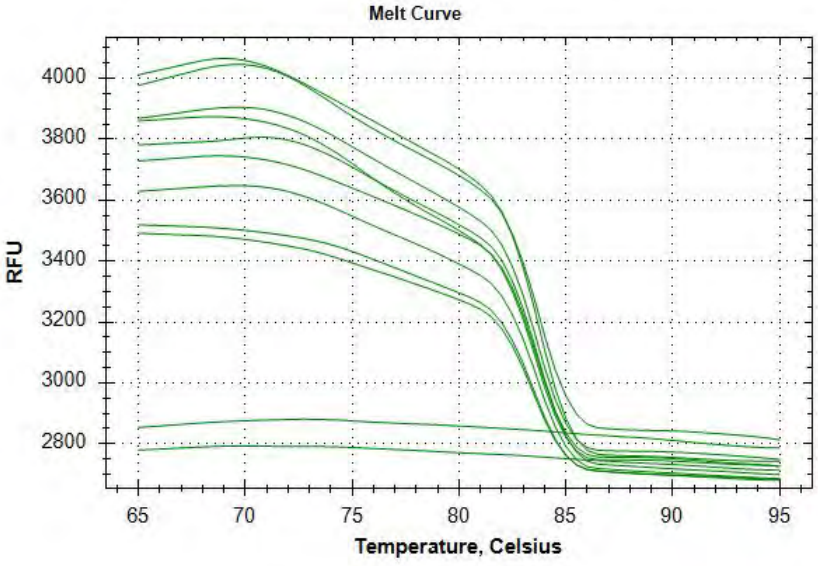


**Figure 36.2: NR1C1 melt curve**

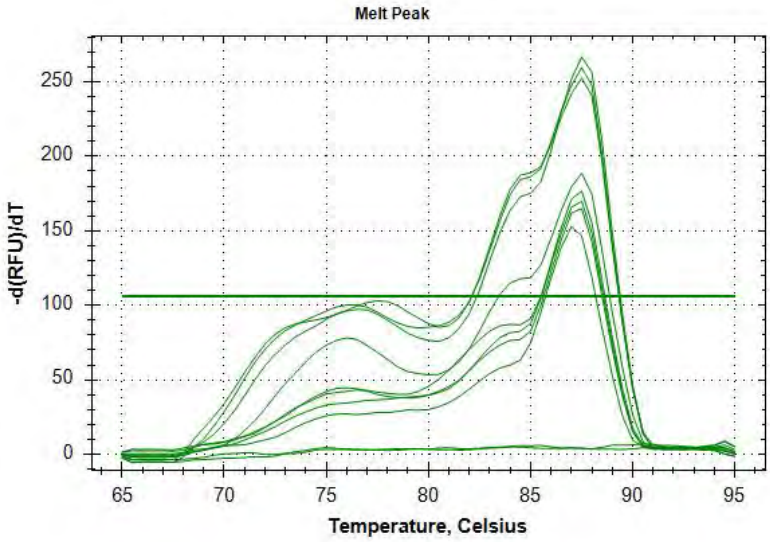
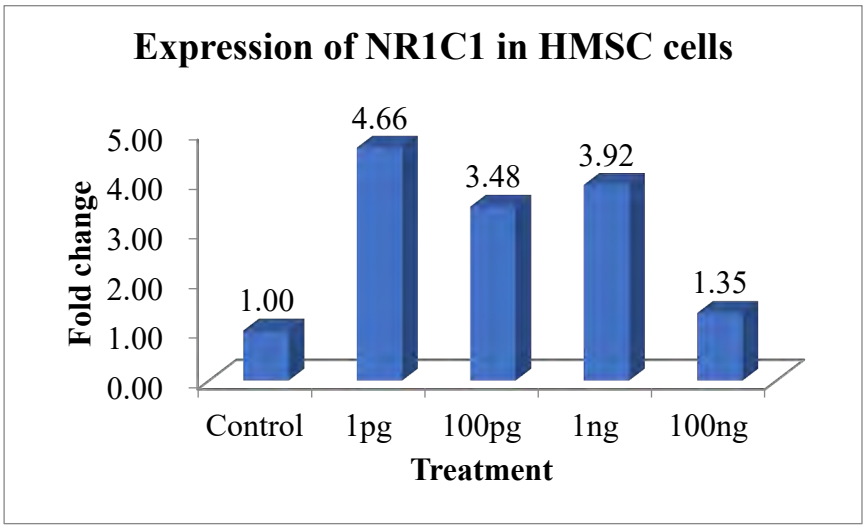



**Figure 36.3: NR1C1 melt peak**

**Table 36 and Graph 36 for relative expression of NR1C1 gene:**

| Sample | Actin | NR1C1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.46 | 23.54 | 3.08 | 0.00 | 1.00 |
| 1pg | 21.47 | 22.32 | 0.85 | -2.22 | 4.66 |
| 100pg | 20.87 | 22.15 | 1.28 | -1.80 | 3.48 |
| 1ng | 20.84 | 21.95 | 1.11 | -1.97 | 3.92 |
| 100ng | 21.13 | 23.77 | 2.64 | -0.44 | 1.35 |



## NR1H3 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR1H3 | Unkn | Control | cDNA | 23.35 | 23.11 | 23.23 |
| SYBR | NR1H3 | Unkn | 1pg | cDNA | 23.25 | 22.83 | 23.04 |
| SYBR | NR1H3 | Unkn | 100pg | cDNA | 23.54 | 23.21 | 23.38 |
| SYBR | NR1H3 | Unkn | 1ng | cDNA | 23.96 | 23.60 | 23.78 |
| SYBR | NR1H3 | Unkn | 100ng | cDNA | 25.44 | 25.00 | 25.22 |
| SYBR | NR1H3 | NTC | NTC | NTC | N/A | N/A | N/A |

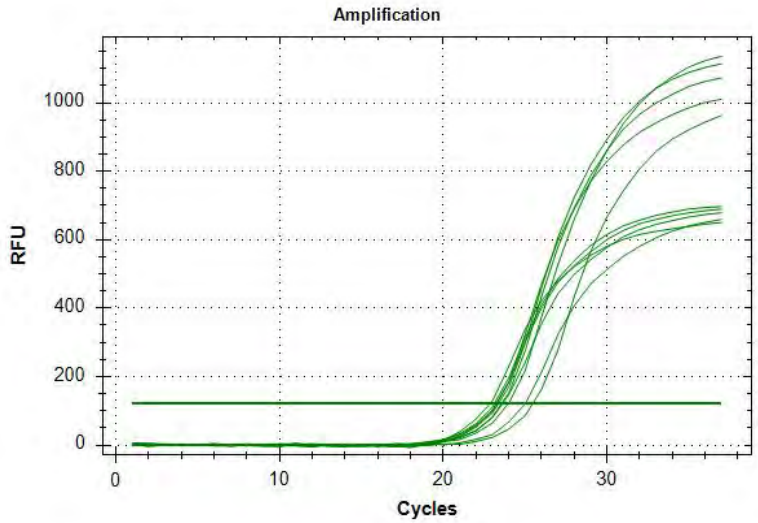



**Figure 37.1: NR1H3 Amplification curve**

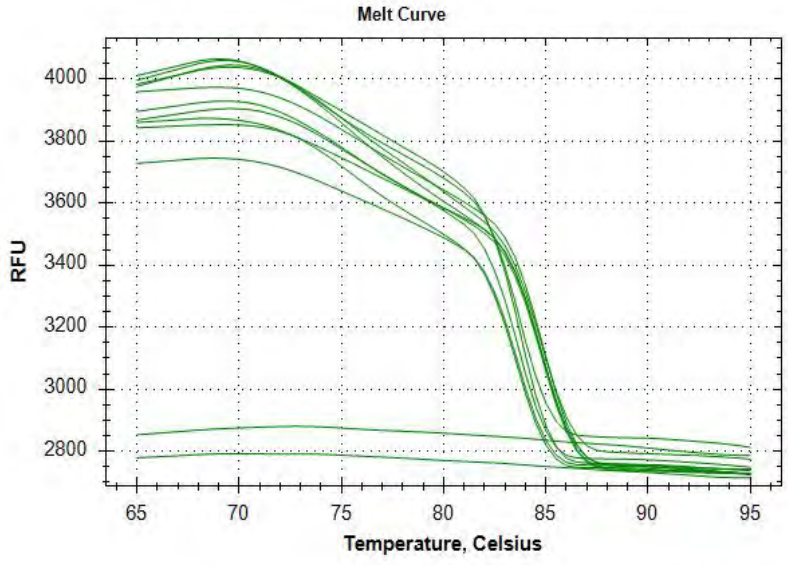


**Figure 37.2: NR1H3 melt curve**

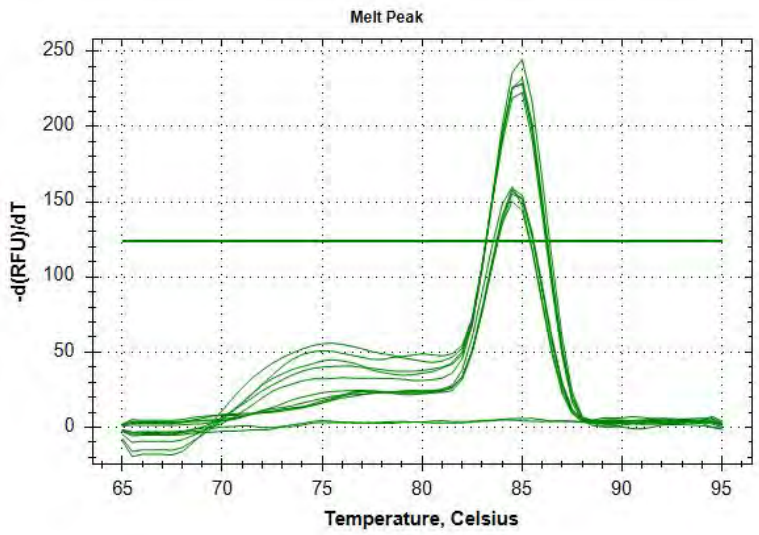
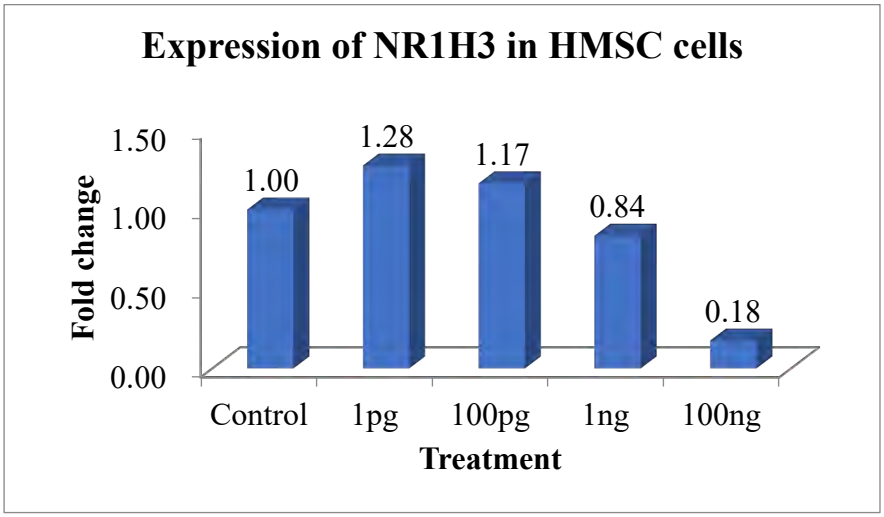



**Figure 37.3: NR1H3 melt peak**

**Table 37 and Graph 37 for relative expression of NR1H3 gene:**

| Sample | Actin | NR1H3 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 23.23 | 2.48 | 0.00 | 1.00 |
| 1pg | 20.92 | 23.04 | 2.12 | -0.35 | 1.28 |
| 100pg | 21.12 | 23.38 | 2.26 | -0.22 | 1.17 |
| 1ng | 21.04 | 23.78 | 2.74 | 0.26 | 0.84 |
| 100ng | 20.23 | 25.22 | 4.99 | 2.51 | 0.18 |



## NR2A1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR2A1 | Unkn | Control | cDNA | 21.11 | 21.16 | 21.13 |
| SYBR | NR2A1 | Unkn | 1pg | cDNA | 21.18 | 21.45 | 21.31 |
| SYBR | NR2A1 | Unkn | 100pg | cDNA | 21.99 | 21.97 | 21.98 |
| SYBR | NR2A1 | Unkn | 1ng | cDNA | 22.31 | 22.47 | 22.39 |
| SYBR | NR2A1 | Unkn | 100ng | cDNA | 23.44 | 23.77 | 23.61 |
| SYBR | NR2A1 | NTC | NTC | NTC | N/A | N/A | N/A |

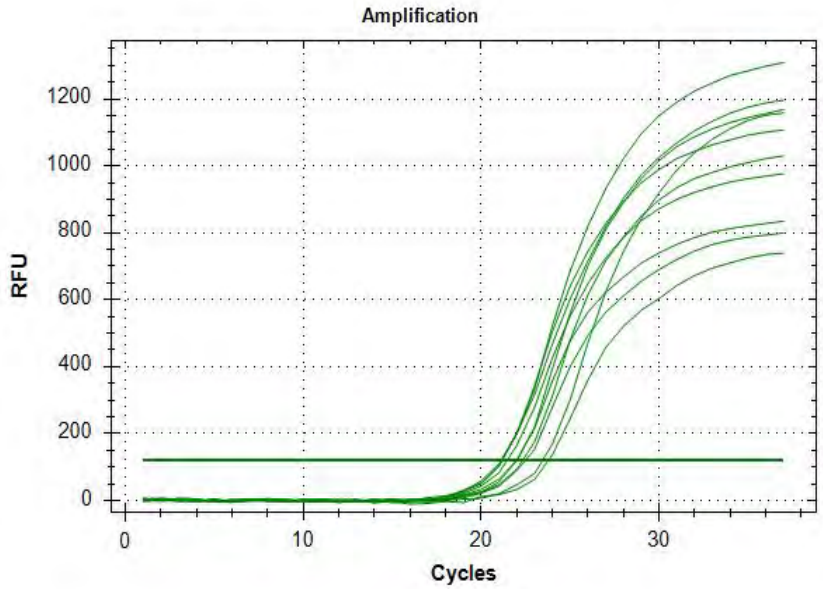



**Figure 38.1: NR2A1 Amplification curve**

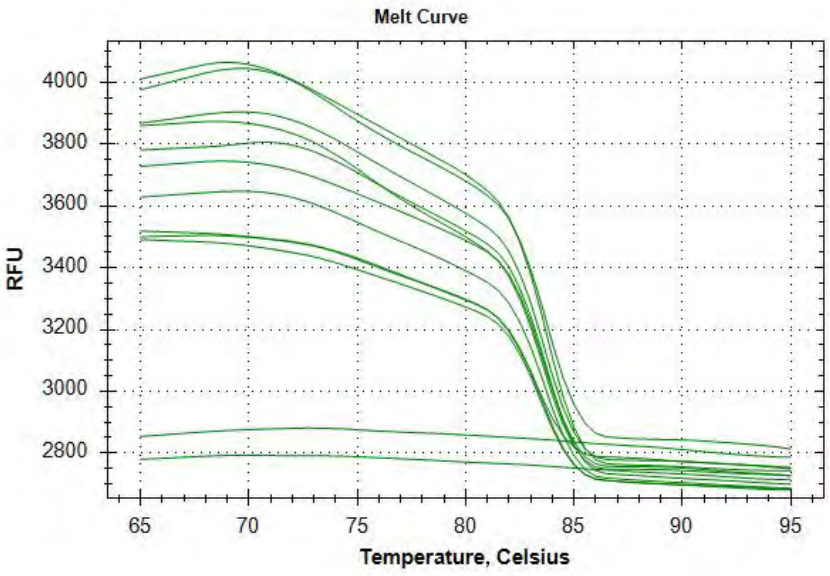



**Figure 38.2: NR2A1 melt curve**

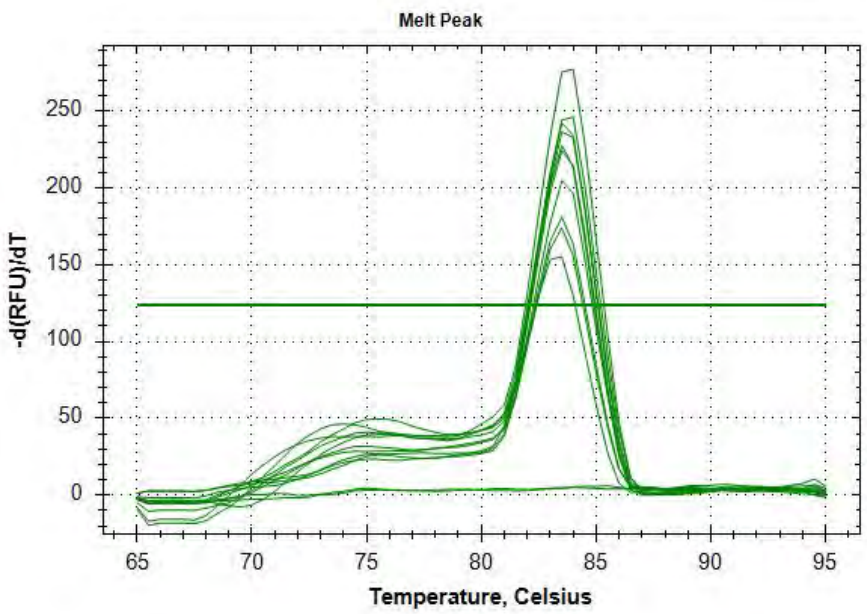
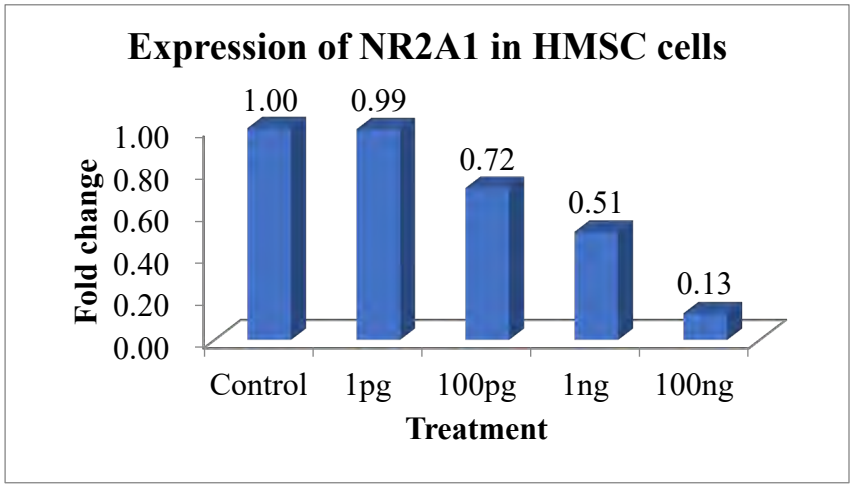



**Figure 38.3: NR2A1 melt peak**

**Table 38 and Graph 38 for relative expression of NR2A1 gene:**

| Sample | Actin | NR2A1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 21.13 | 0.38 | 0.00 | 1.00 |
| 1pg | 20.92 | 21.31 | 0.39 | 0.01 | 0.99 |
| 100pg | 21.12 | 21.98 | 0.86 | 0.48 | 0.72 |
| 1ng | 21.04 | 22.39 | 1.35 | 0.97 | 0.51 |
| 100ng | 20.23 | 23.61 | 3.38 | 2.99 | 0.13 |




## NR2F6 Gene:

**Raw Data**

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR2F6 | Unkn | Control | cDNA | 18.85 | 19.43 | 19.14 |
| SYBR | NR2F6 | Unkn | 1pg | cDNA | 19.00 | 19.66 | 19.33 |
| SYBR | NR2F6 | Unkn | 100pg | cDNA | 19.05 | 20.11 | 19.58 |
| SYBR | NR2F6 | Unkn | 1ng | cDNA | 19.48 | 21.83 | 20.66 |
| SYBR | NR2F6 | Unkn | 100ng | cDNA | 21.20 | 23.37 | 22.28 |
| SYBR | NR2F6 | NTC | NTC | NTC | N/A | N/A | N/A |

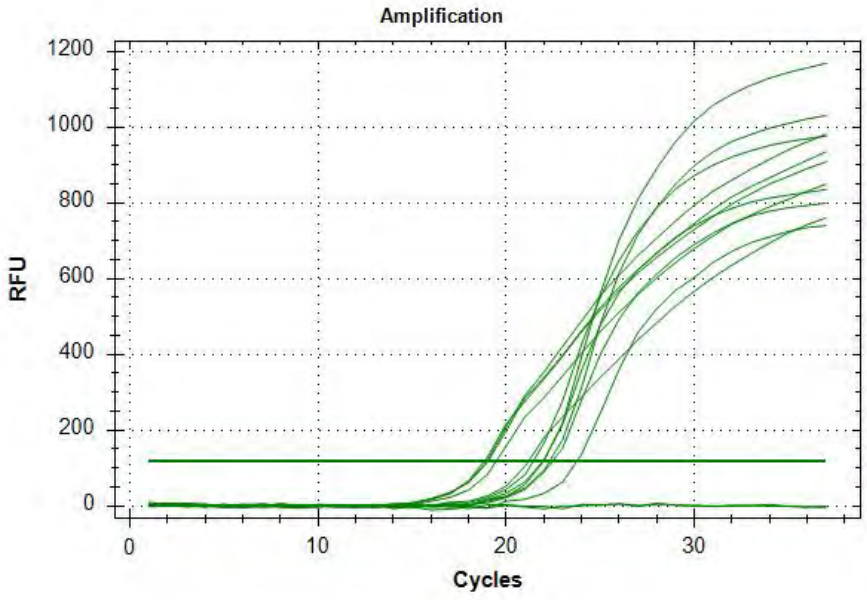



**Figure 39.1: NR2F6 Amplification curve**

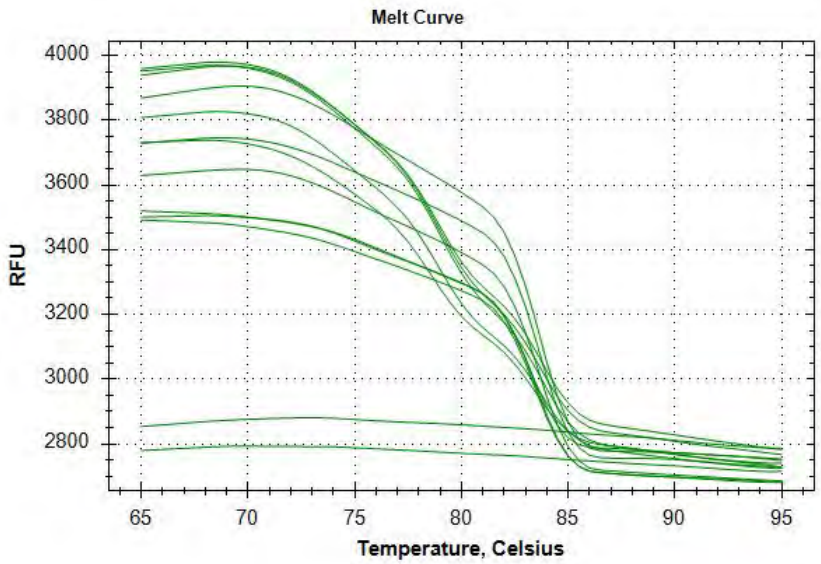



**Figure 39.2: NR2F6 melt curve**

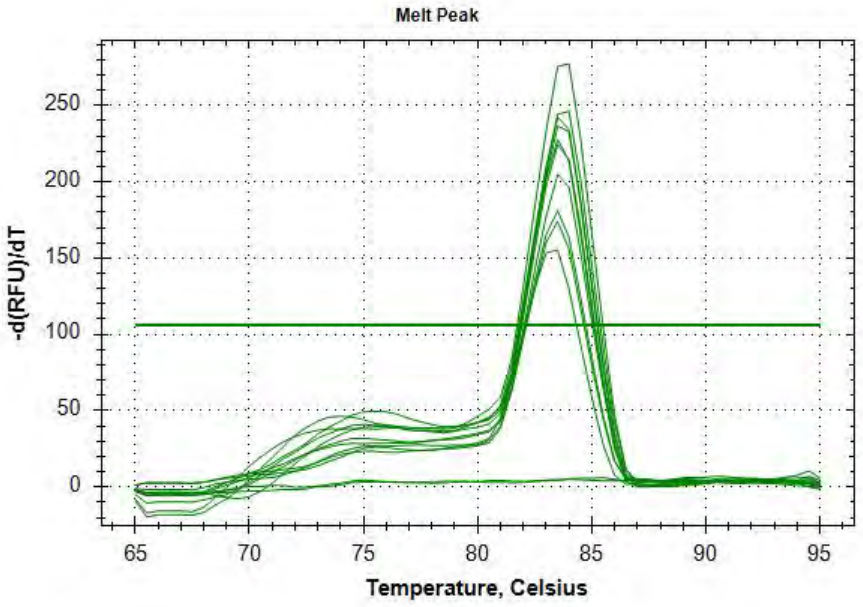
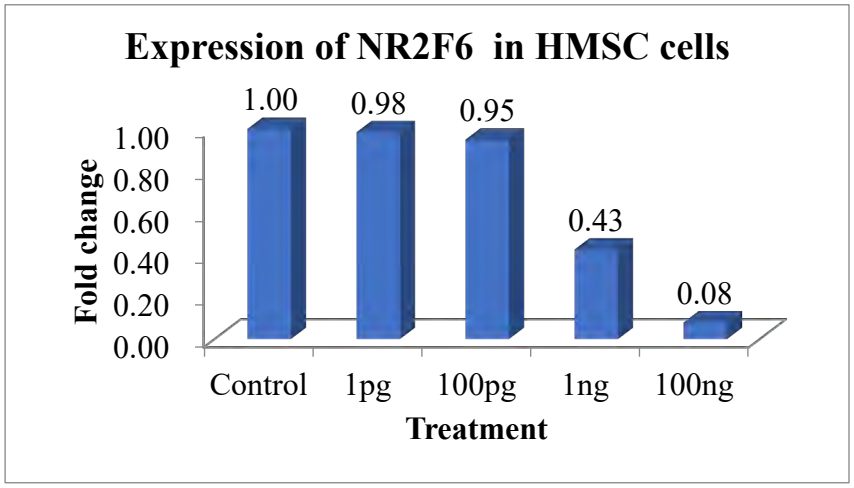



**Figure 39.3: NR2F6 melt peak**

**Table 39 and Graph 39 for relative expression of NR2F6 gene:**

| Sample | Actin | NR2F6 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 19.14 | -1.61 | 0.00 | 1.00 |
| 1pg | 20.92 | 19.33 | -1.59 | 0.02 | 0.98 |
| 100pg | 21.12 | 19.58 | -1.54 | 0.08 | 0.95 |
| 1ng | 21.04 | 20.66 | -0.38 | 1.23 | 0.43 |
| 100ng | 20.23 | 22.28 | 2.05 | 3.67 | 0.08 |



## NR3C1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR3C1 | Unkn | Control | cDNA | 17.67 | 18.14 | 17.90 |
| SYBR | NR3C1 | Unkn | 1pg | cDNA | 18.00 | 18.18 | 18.09 |
| SYBR | NR3C1 | Unkn | 100pg | cDNA | 18.34 | 17.82 | 18.08 |
| SYBR | NR3C1 | Unkn | 1ng | cDNA | 18.22 | 18.75 | 18.49 |
| SYBR | NR3C1 | Unkn | 100ng | cDNA | 20.83 | 20.99 | 20.91 |
| SYBR | NR3C1 | NTC | NTC | NTC | N/A | N/A | N/A |

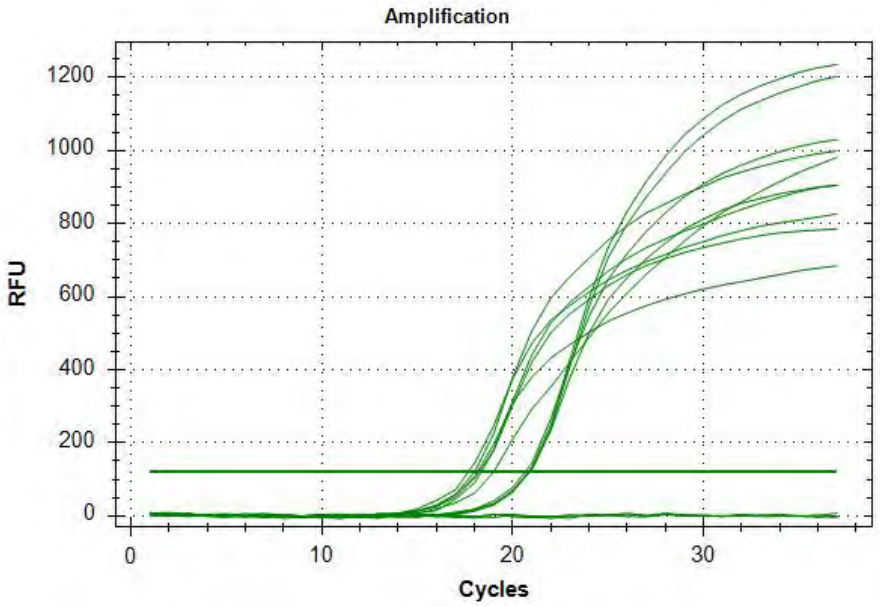



**Figure 40.1: NR3C1 Amplification curve**

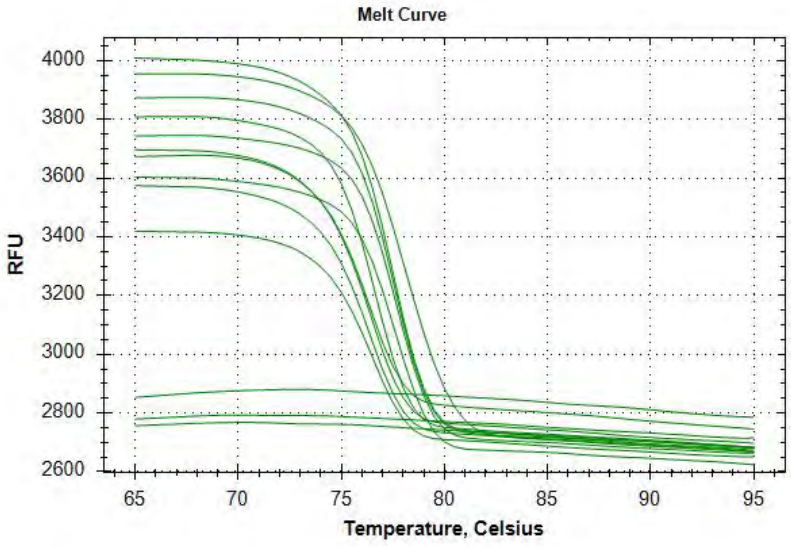


**Figure 40.2: NR3C1 melt curve**

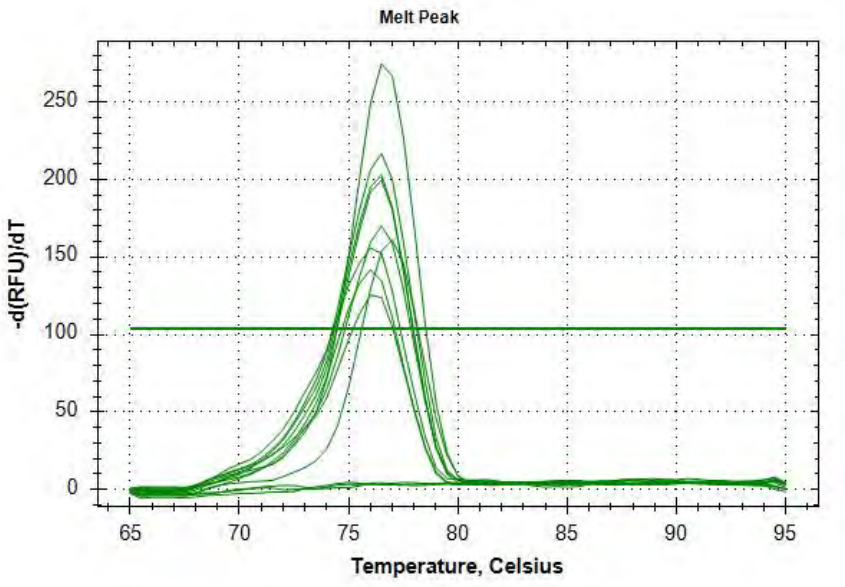
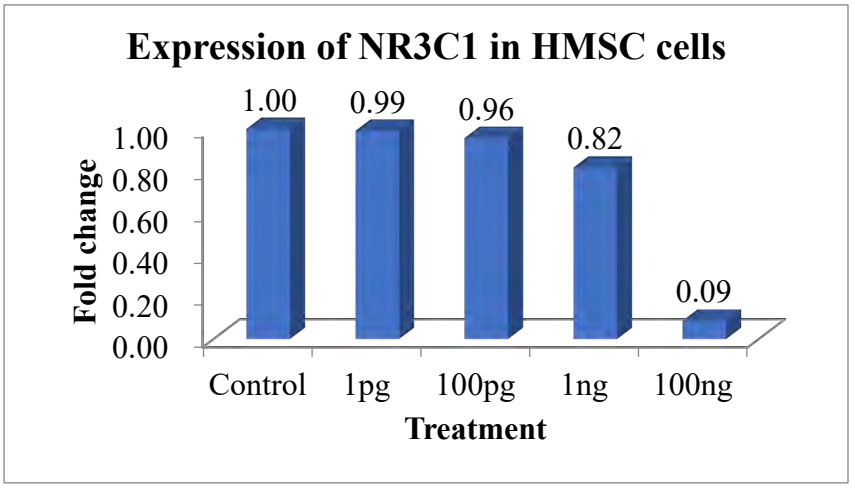



**Figure 40.3: NR3C1 melt peak**

**Table 40 and Graph 40 for relative expression of NR3C1 gene:**

| Sample | Actin | NR3C1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 17.90 | -2.85 | 0.00 | 1.00 |
| 1pg | 20.92 | 18.09 | -2.83 | 0.01 | 0.99 |
| 100pg | 21.12 | 18.08 | -2.78 | 0.06 | 0.96 |
| 1ng | 21.04 | 18.49 | -2.55 | 0.29 | 0.82 |
| 100ng | 20.23 | 20.91 | 0.68 | 3.53 | 0.09 |



## NR3C3 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR3C3 | Unkn | Control | cDNA | 20.63 | 20.89 | 20.76 |
| SYBR | NR3C3 | Unkn | 1pg | cDNA | 20.80 | 20.56 | 20.68 |
| SYBR | NR3C3 | Unkn | 100pg | cDNA | 21.24 | 21.19 | 21.22 |
| SYBR | NR3C3 | Unkn | 1ng | cDNA | 21.28 | 21.99 | 21.64 |
| SYBR | NR3C3 | Unkn | 100ng | cDNA | 23.30 | 23.42 | 23.36 |
| SYBR | NR3C3 | NTC | NTC | NTC | N/A | N/A | N/A |

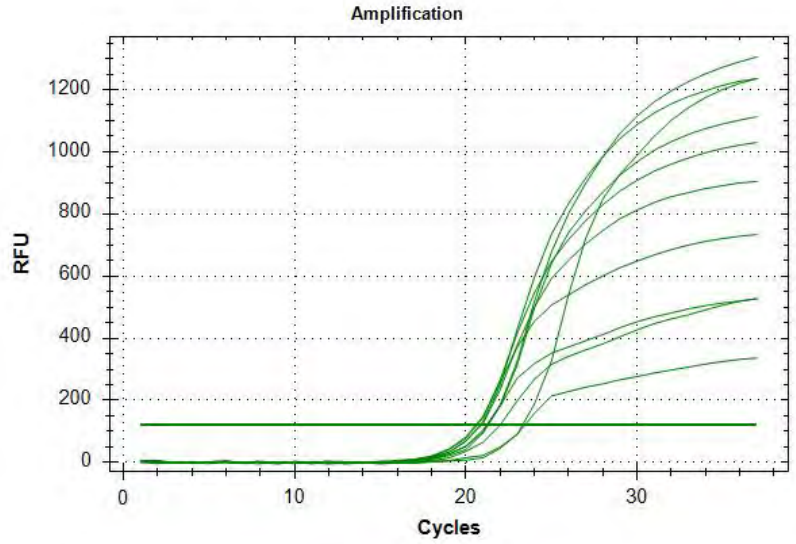



**Figure 41.1: NR3C3 Amplification curve**

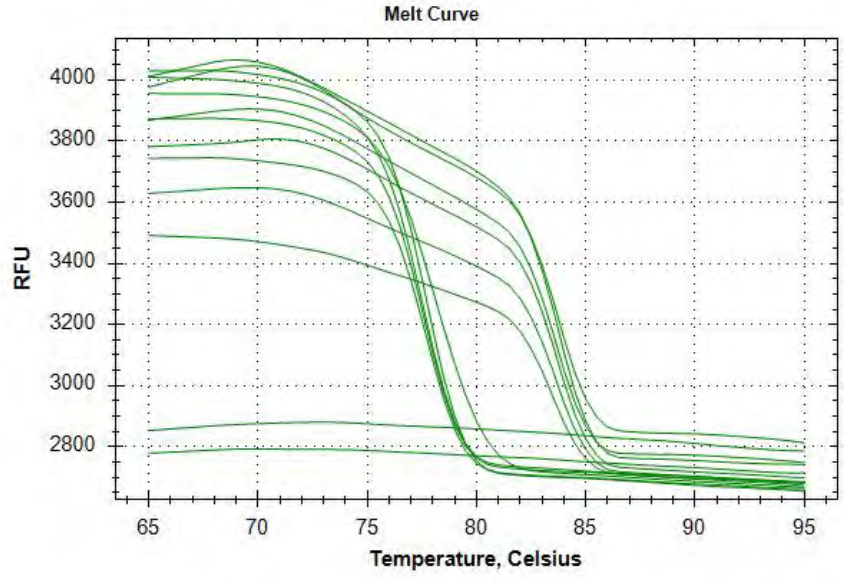


**Figure 41.2: NR3C3 melt curve**

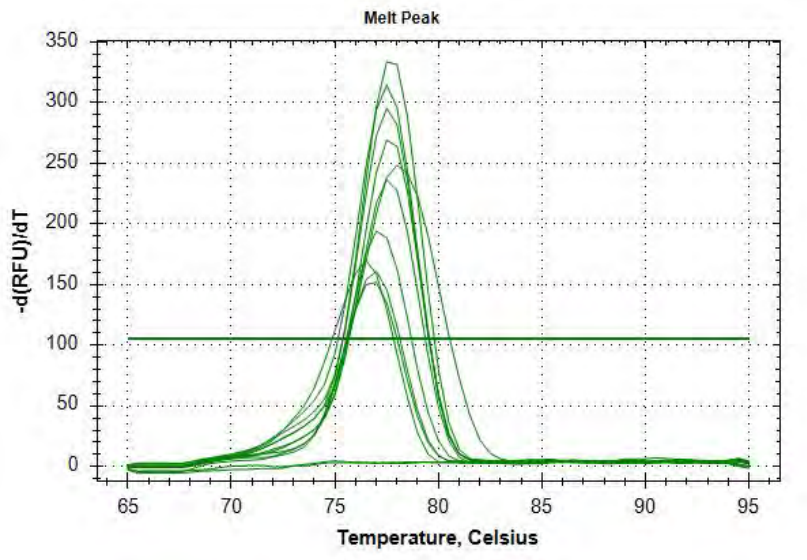
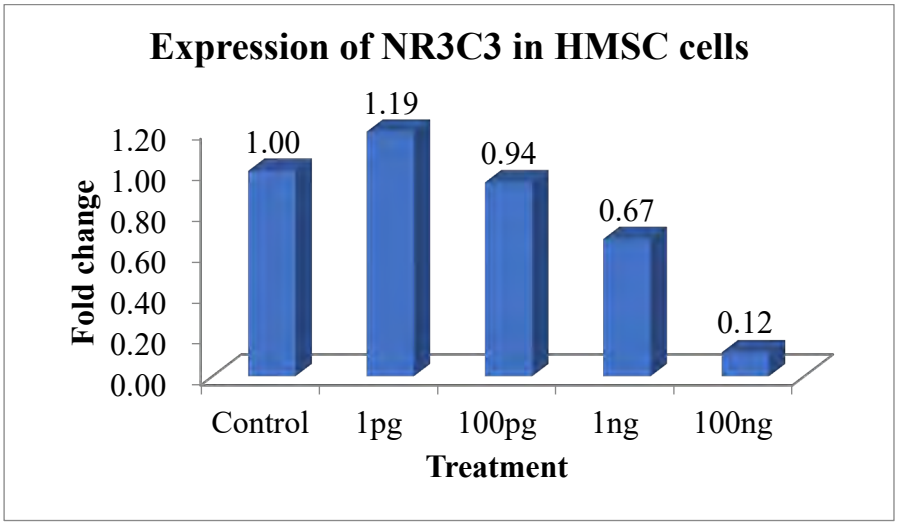



**Figure 41.3: NR3C3 melt peak**

**Table 41 and Graph 41 for relative expression of NR3C3 gene:**

| Sample | Actin | NR3C3 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 20.76 | 0.01 | 0.00 | 1.00 |
| 1pg | 20.92 | 20.68 | -0.24 | -0.25 | 1.19 |
| 100pg | 21.12 | 21.22 | 0.10 | 0.08 | 0.94 |
| 1ng | 21.04 | 21.64 | 0.60 | 0.58 | 0.67 |
| 100ng | 20.23 | 23.36 | 3.13 | 3.11 | 0.12 |



## NR0B2 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR0B2 | Unkn | Control | cDNA | 25.73 | 25.36 | 25.54 |
| SYBR | NR0B2 | Unkn | 1pg | cDNA | 25.21 | 25.26 | 25.23 |
| SYBR | NR0B2 | Unkn | 100pg | cDNA | 26.34 | 26.32 | 26.33 |
| SYBR | NR0B2 | Unkn | 1ng | cDNA | 25.20 | 26.31 | 25.75 |
| SYBR | NR0B2 | Unkn | 100ng | cDNA | 26.88 | 26.70 | 26.79 |
| SYBR | NR0B2 | NTC | NTC | NTC | N/A | N/A | N/A |

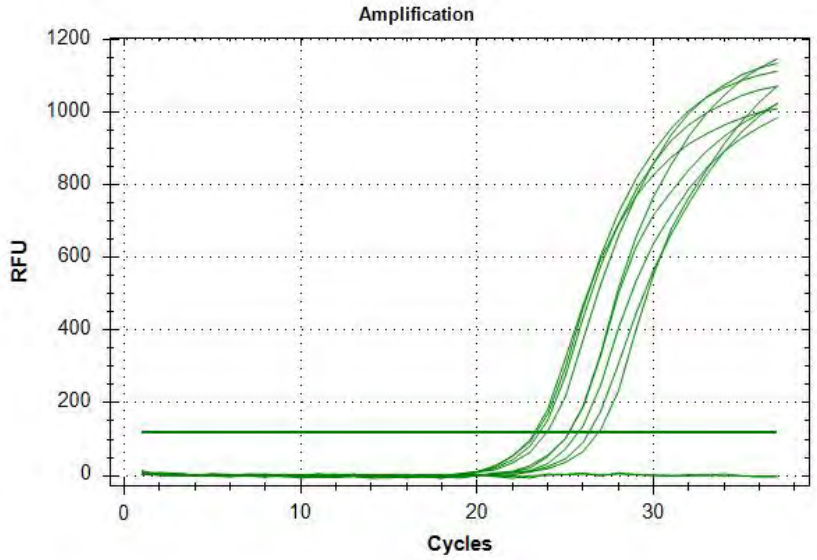



**Figure 42.1: NR0B2 Amplification curve**

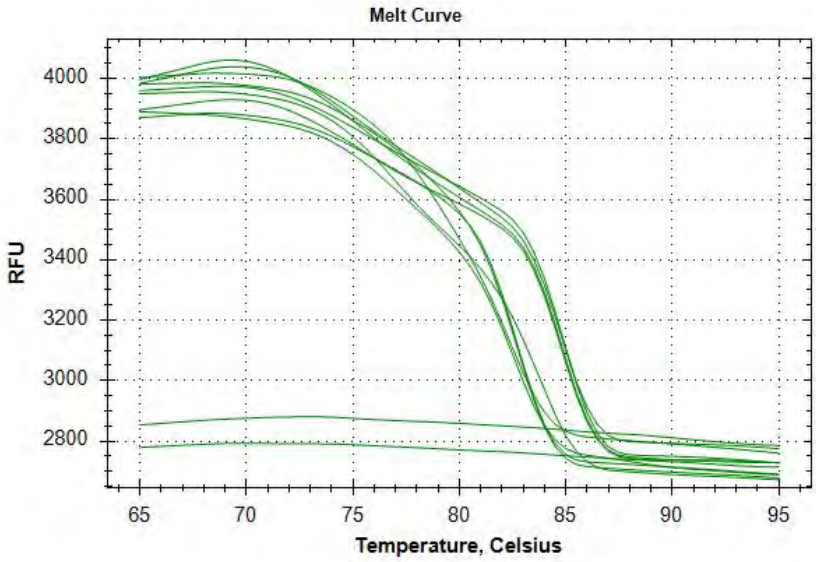


**Figure 42.2: NR0B2 melt curve**

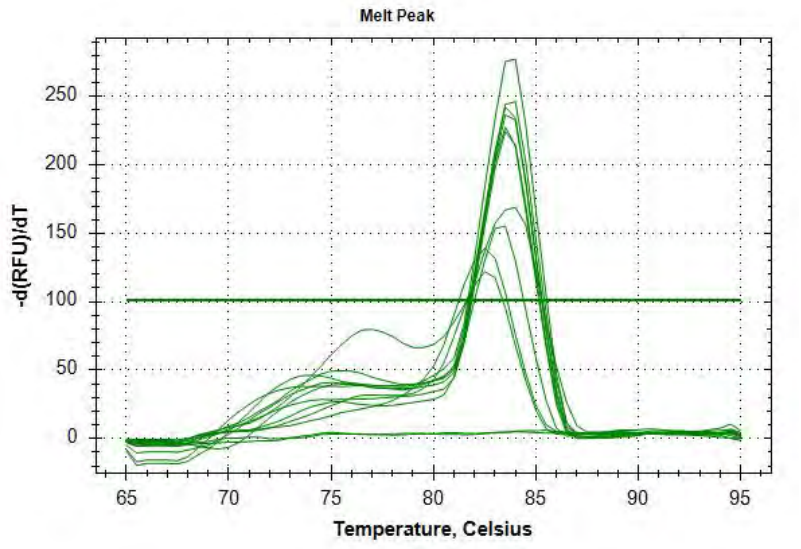
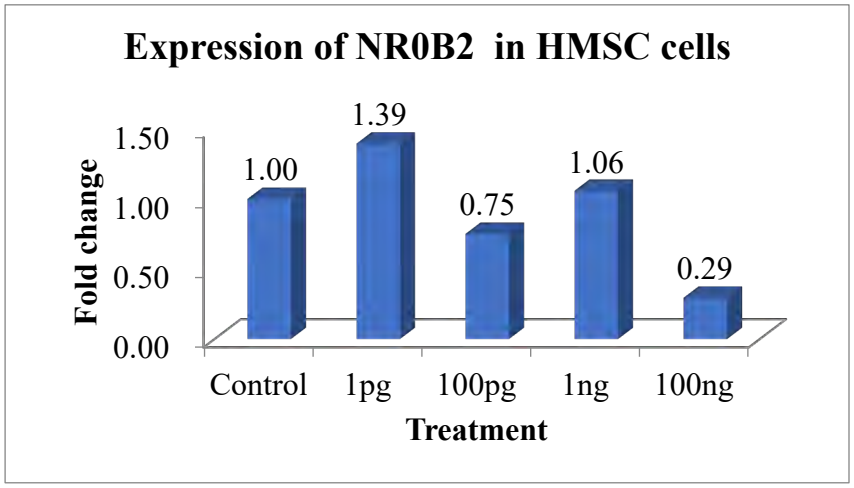



**Figure 42.3: NR0B2 melt peak**

**Table 42 and Graph 42 for relative expression of NR0B2 gene:**

| Sample | Actin | NR0B2 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 25.54 | 4.79 | 0.00 | 1.00 |
| 1pg | 20.92 | 25.23 | 4.31 | -0.48 | 1.39 |
| 100pg | 21.12 | 26.33 | 5.21 | 0.41 | 0.75 |
| 1ng | 21.04 | 25.75 | 4.71 | -0.08 | 1.06 |
| 100ng | 20.23 | 26.79 | 6.56 | 1.76 | 0.29 |



## NR0B1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR0B1 | Unkn | Control | cDNA | 24.98 | 24.93 | 24.95 |
| SYBR | NR0B1 | Unkn | 1pg | cDNA | 27.41 | 27.71 | 27.56 |
| SYBR | NR0B1 | Unkn | 100pg | cDNA | 27.19 | 26.67 | 26.93 |
| SYBR | NR0B1 | Unkn | 1ng | cDNA | 26.66 | 26.63 | 26.64 |
| SYBR | NR0B1 | Unkn | 100ng | cDNA | 27.55 | 27.66 | 27.61 |
| SYBR | NR0B1 | NTC | NTC | NTC | N/A | N/A | N/A |

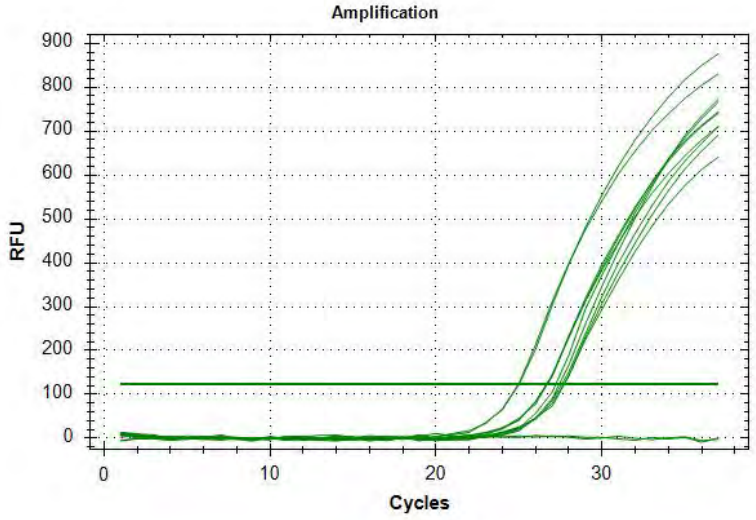



**Figure 43.1: NR0B1 Amplification curve**

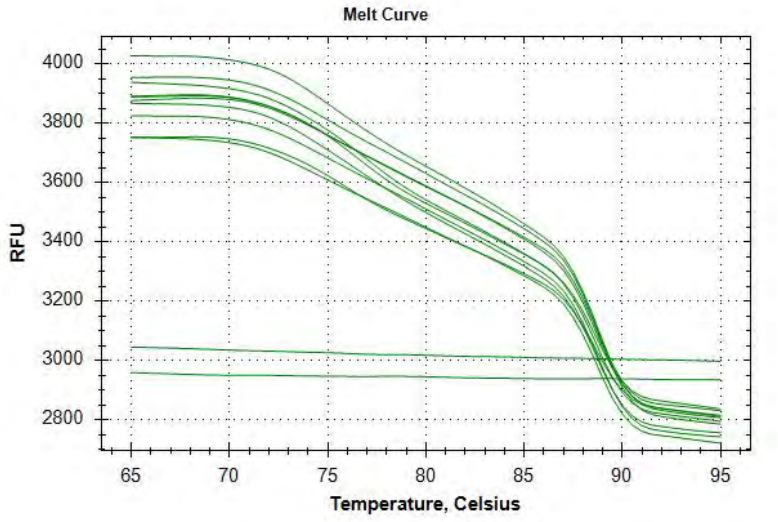



**Figure 43.2: NR0B1 melt curve**

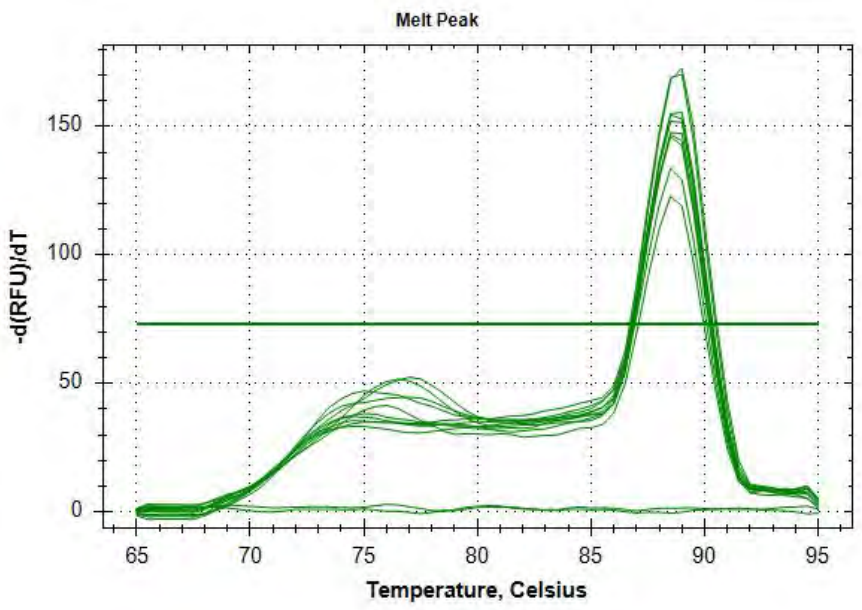
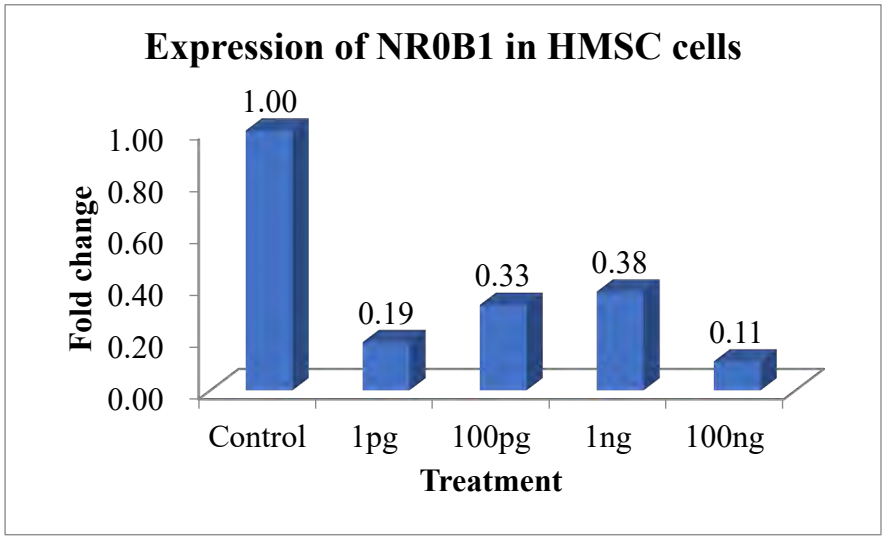



**Figure 43.3: NR0B1 melt peak**

**Table 43 and Graph 43 for relative expression of NR0B1 gene:**

| Sample | Actin | NR0B1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 24.95 | 4.20 | 0.00 | 1.00 |
| 1pg | 20.92 | 27.56 | 6.64 | 2.43 | 0.19 |
| 100pg | 21.12 | 26.93 | 5.81 | 1.61 | 0.33 |
| 1ng | 21.04 | 26.64 | 5.60 | 1.40 | 0.38 |
| 100ng | 20.23 | 27.61 | 7.38 | 3.17 | 0.11 |



## NR2E1 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR2E1 | Unkn | Control | cDNA | 24.93 | 24.83 | 24.88 |
| SYBR | NR2E1 | Unkn | 1pg | cDNA | 25.08 | 25.16 | 25.12 |
| SYBR | NR2E1 | Unkn | 100pg | cDNA | 24.86 | 24.74 | 24.80 |
| SYBR | NR2E1 | Unkn | 1ng | cDNA | 24.71 | 25.16 | 24.94 |
| SYBR | NR2E1 | Unkn | 100ng | cDNA | 25.22 | 25.12 | 25.17 |
| SYBR | NR2E1 | NTC | NTC | NTC | N/A | N/A | N/A |

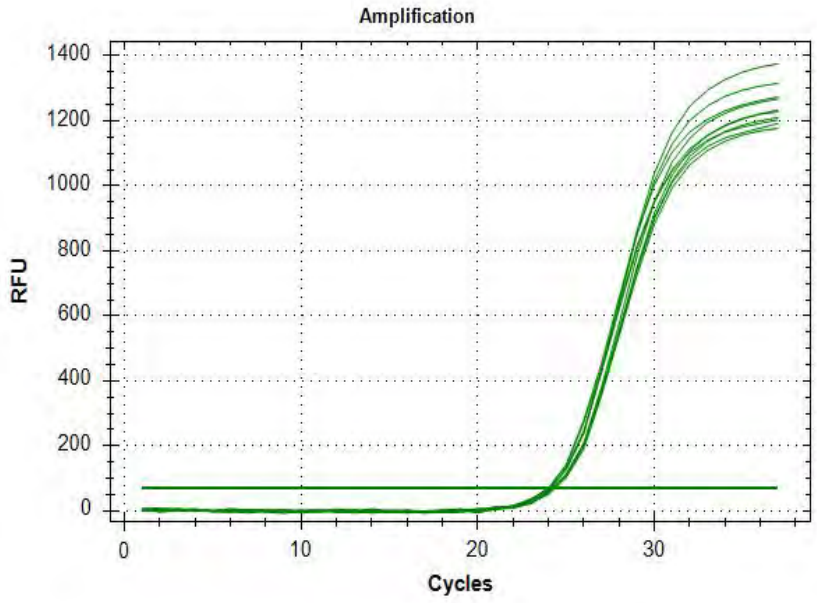



**Figure 44.1: NR2E1 Amplification curve**

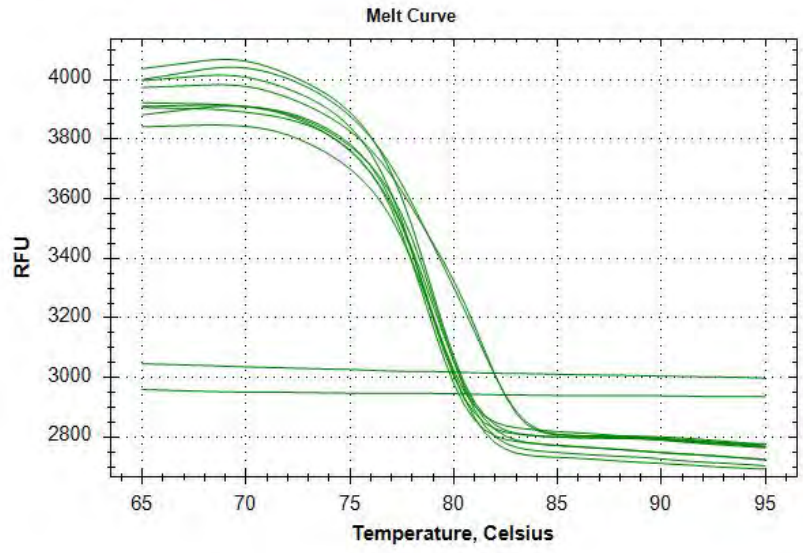


**Figure 44.2: NR2E1 melt curve**

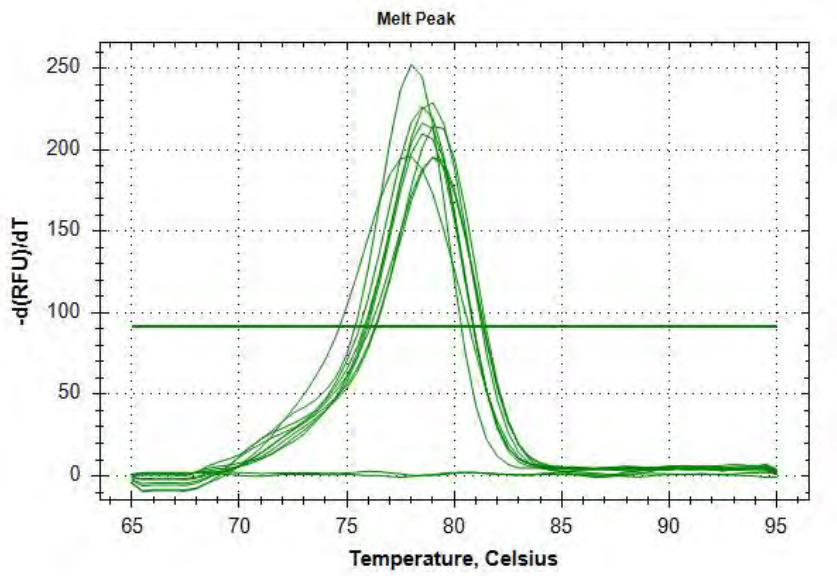
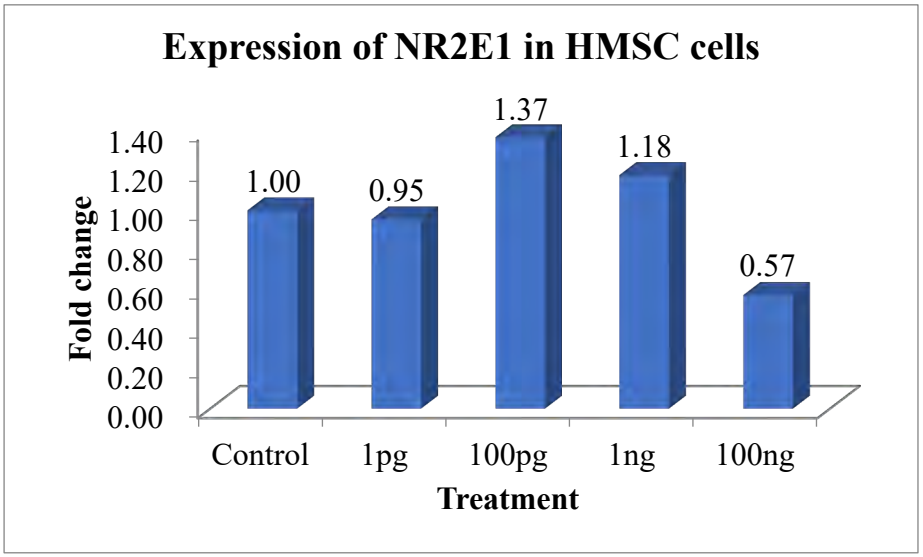



**Figure 44.3: NR2E1 melt peak**

**Table 44 and Graph 44 for relative expression of NR2E1 gene:**

| Sample | Actin | NR2E1 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 24.88 | 4.13 | 0.00 | 1.00 |
| 1pg | 20.92 | 25.12 | 4.20 | 0.07 | 0.95 |
| 100pg | 21.12 | 24.80 | 3.68 | -0.45 | 1.37 |
| 1ng | 21.04 | 24.94 | 3.90 | -0.24 | 1.18 |
| 100ng | 20.23 | 25.17 | 4.94 | 0.80 | 0.57 |



## NR3C2 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR3C2 | Unkn | Control | cDNA | 20.29 | 20.41 | 20.35 |
| SYBR | NR3C2 | Unkn | 1pg | cDNA | 20.36 | 20.28 | 20.32 |
| SYBR | NR3C2 | Unkn | 100pg | cDNA | 21.08 | 21.06 | 21.07 |
| SYBR | NR3C2 | Unkn | 1ng | cDNA | 21.50 | 21.68 | 21.59 |
| SYBR | NR3C2 | Unkn | 100ng | cDNA | 22.09 | 22.10 | 22.10 |
| SYBR | NR3C2 | NTC | NTC | NTC | N/A | N/A | N/A |

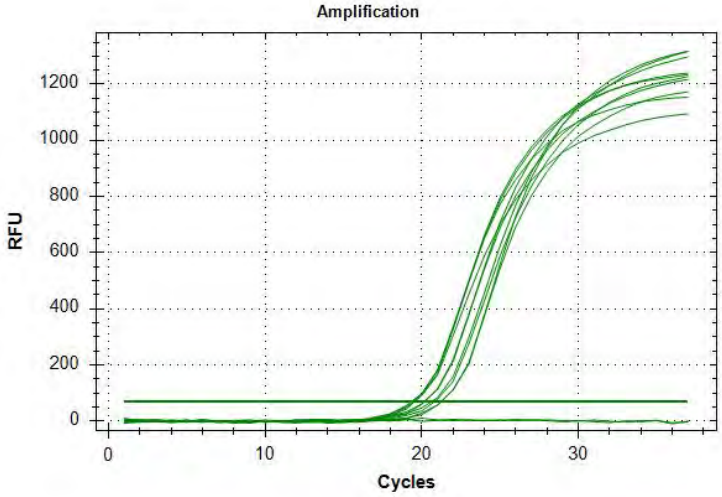



**Figure 45.1: NR3C2 Amplification curve**

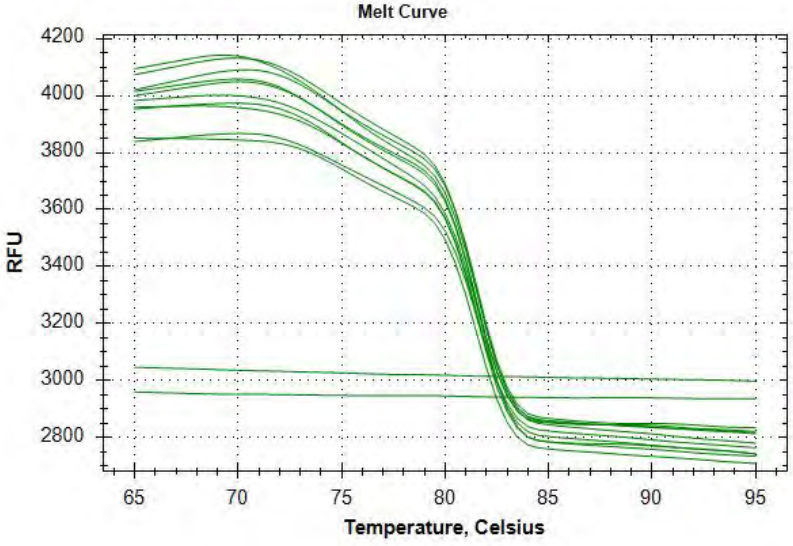



**Figure 45.2: NR3C2 melt curve**

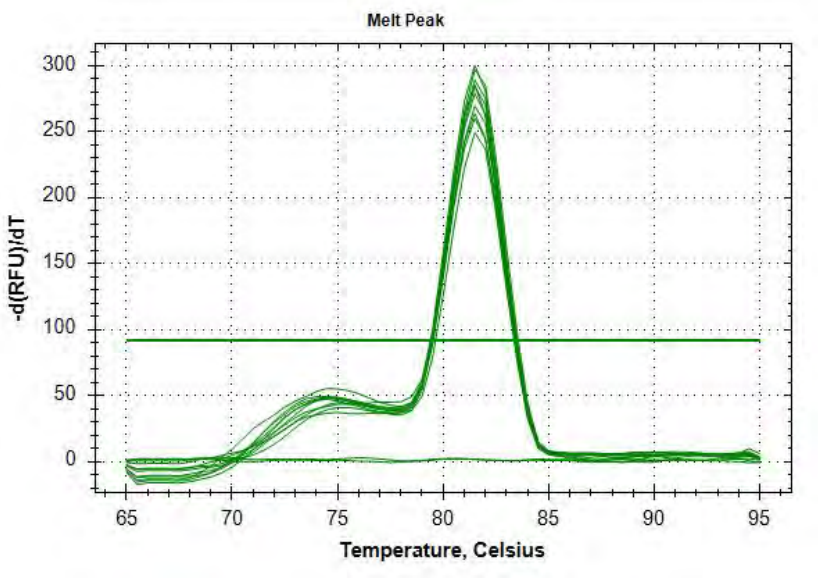
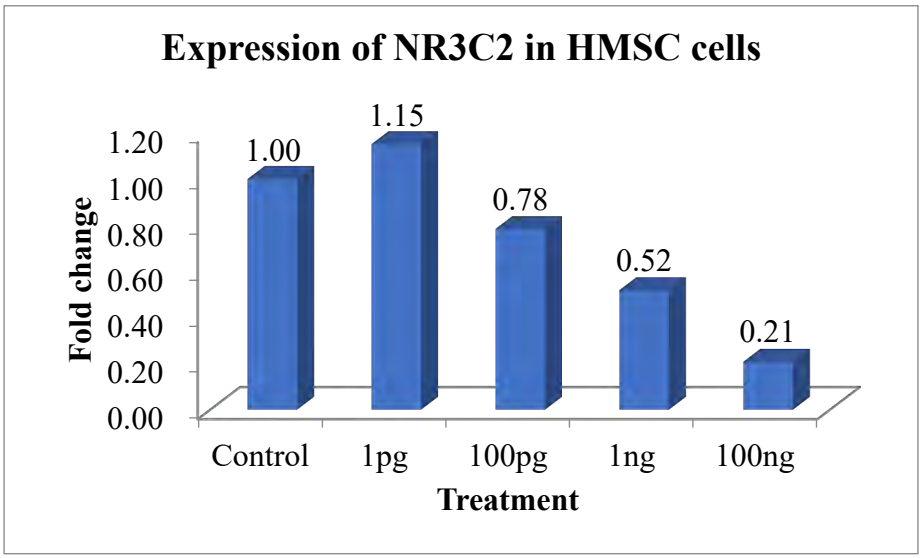



**Figure 45.3: NR3C2 melt peak**

**Table 45 and Graph 45 for relative expression of NR3C2 gene:**

| Sample | Actin | NR3C2 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 20.35 | -0.40 | 0.00 | 1.00 |
| 1pg | 20.92 | 20.32 | -0.60 | -0.20 | 1.15 |
| 100pg | 21.12 | 21.07 | -0.05 | 0.35 | 0.78 |
| 1ng | 21.04 | 21.59 | 0.55 | 0.95 | 0.52 |
| 100ng | 20.23 | 22.10 | 1.87 | 2.27 | 0.21 |



## NR3C4 Gene:

### Raw Data

| Fluor | Target | Content | Sample | Biological Set Name | Cq | Cq | Mean Cq |
|---|---|---|---|---|---|---|---|
| SYBR | NR3C4 | Unkn | Control | cDNA | 22.02 | 22.22 | 22.12 |
| SYBR | NR3C4 | Unkn | 1pg | cDNA | 21.90 | 22.29 | 22.09 |
| SYBR | NR3C4 | Unkn | 100pg | cDNA | 22.86 | 25.00 | 23.93 |
| SYBR | NR3C4 | Unkn | 1ng | cDNA | 25.25 | 26.04 | 25.65 |
| SYBR | NR3C4 | Unkn | 100ng | cDNA | 25.34 | 21.02 | 23.18 |
| SYBR | NR3C4 | NTC | NTC | NTC | N/A | N/A | N/A |

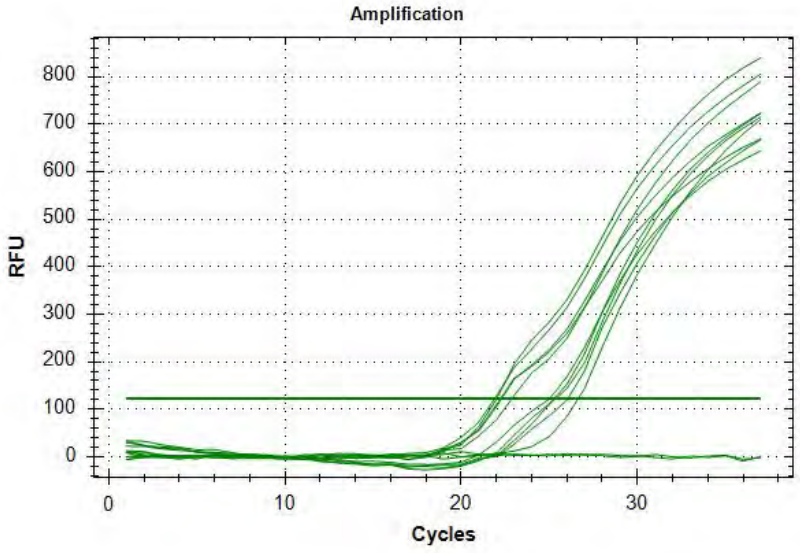



**Figure 46.1: NR3C4 Amplification curve**

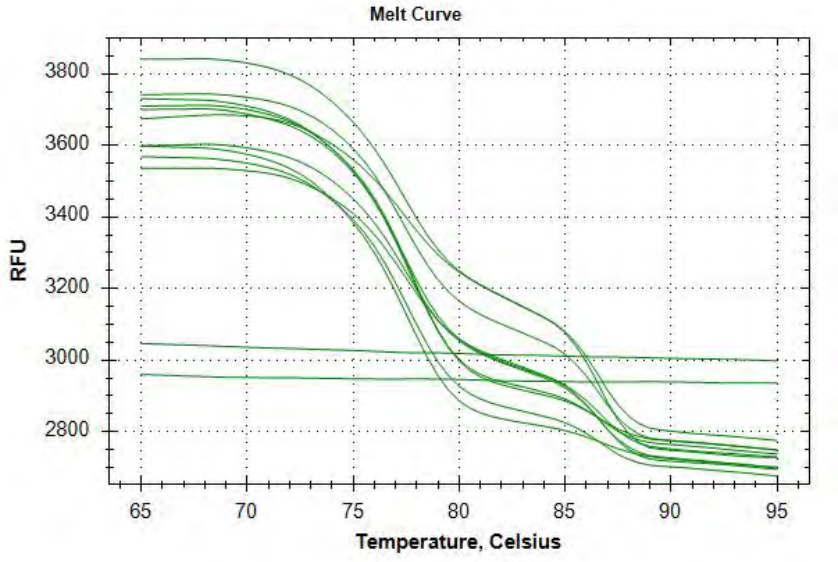


**Figure 46.2: NR3C4 melt curve**

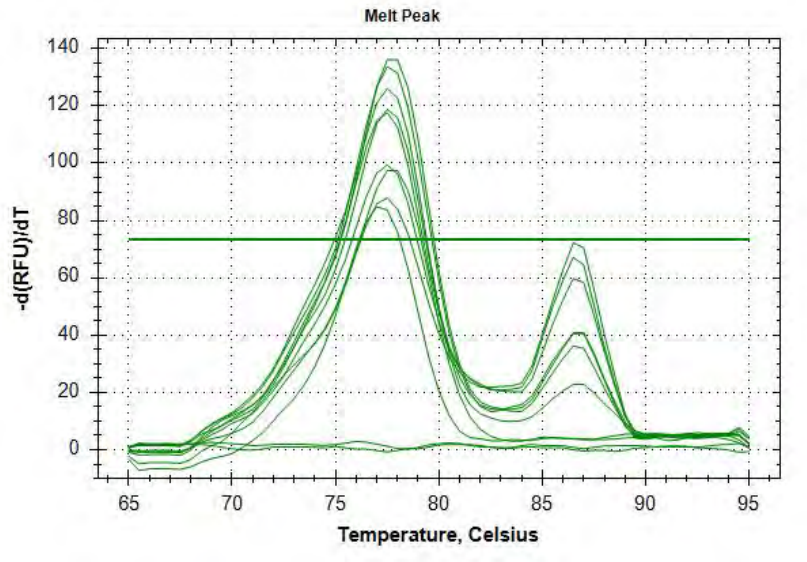
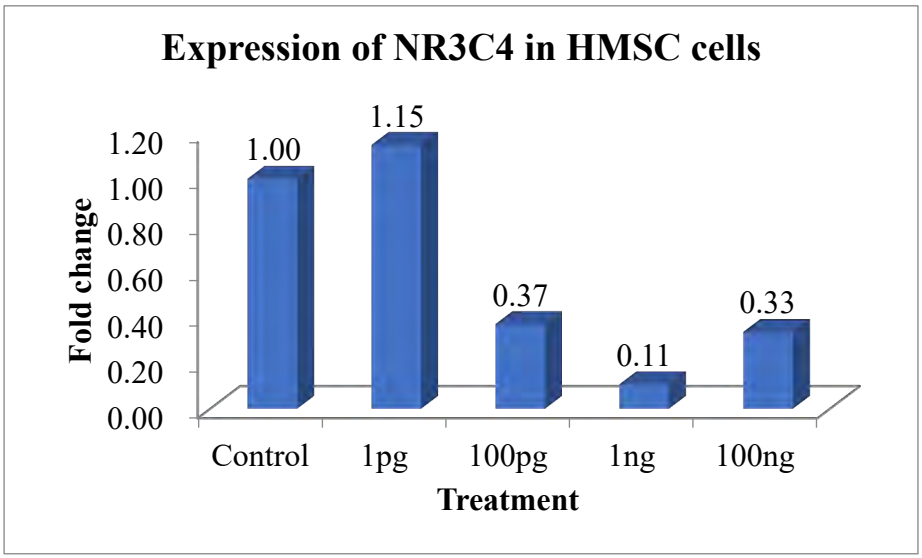



**Figure 46.3: NR3C4 melt peak**

**Table 46 and Graph 46 for relative expression of NR3C4 gene:**

| Sample | Actin | NR3C4 | Delta ct | Delta Delta ct | Fold change 2^DDct |
|---|---|---|---|---|---|
| **Control** | 20.75 | 22.12 | 1.37 | 0.00 | 1.00 |
| 1pg | 20.92 | 22.09 | 1.17 | -0.20 | 1.15 |
| 100pg | 21.12 | 23.93 | 2.81 | 1.44 | 0.37 |
| 1ng | 21.04 | 25.65 | 4.61 | 3.24 | 0.11 |
| 100ng | 20.23 | 23.18 | 2.95 | 1.58 | 0.33 |



**Comments**

The qPCR analysis of HMSC cells treated with Metadichol at various concentrations for 24hrs was carried out to determine the effects of treatment on transcriptional regulation of nuclear receptor genes. The results show that the genes NR2B2, NR1C3, NR2C2, NR1F1, NR2E3, NR1H4, NR3A2, NR1A1, NR1B1, NR1D1, NR1B2, NR4A1, NR1B3, NR2B1, NR1H2, NR3B3, NR5A2, NR6A1, NR2F1, NR2F2, NR1C1, NR1H3, NR3C3, NR0B2, NR3C2 and NR3C4 have shown marked upregulation at 1pg/ml treatment; NR2C1, NR3B2, NR2B3, NR2A2, NR2E1 and NR1C2 has shown the upregulation at 100pg/ml treatment; NR1F3, NR1A2, NR1I1, NR1C2 and NR3A1 has shown the upregulation at 1ng/ml; NR1D2, NR1I3 and NR5A1 has shown the upregulation at 100ng/ml treatment; whereas, NR3B1, NR4A2, NR1F2, NR2A1, NR2F6, NR3C1, NR3C4 and NR0B1 gene expression is observed to be downregulated.

**----------END OF REPORT----------**