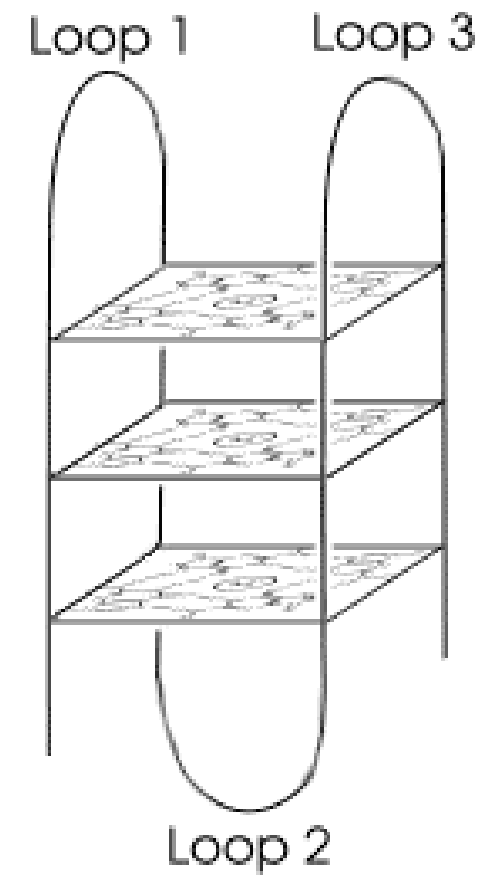
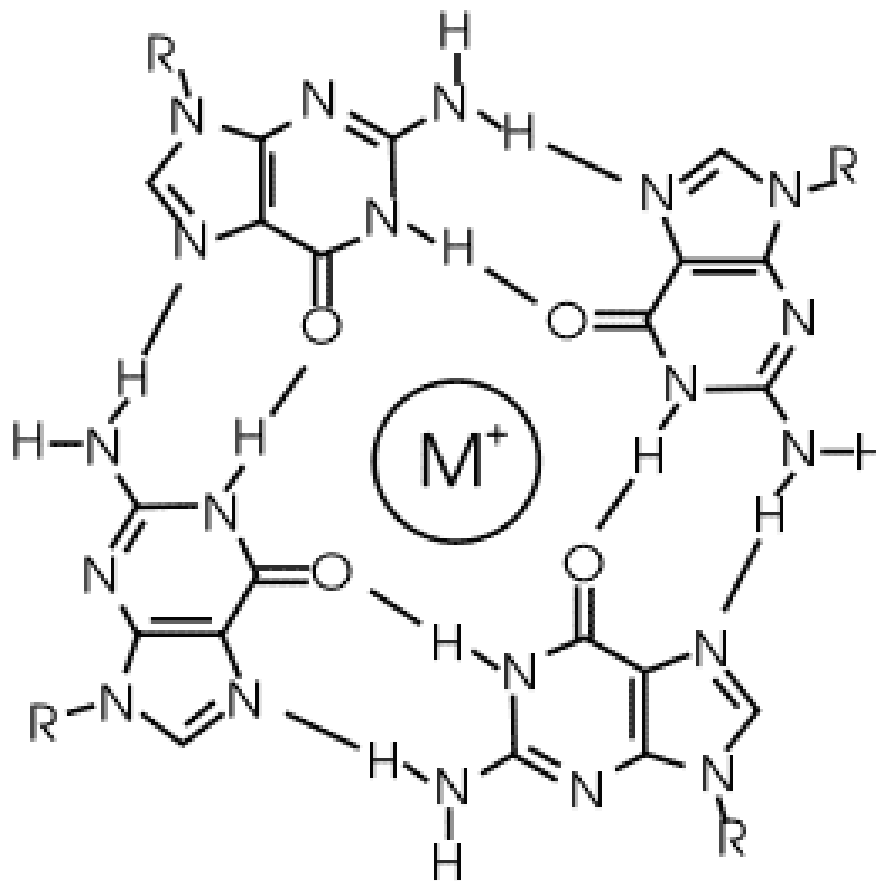


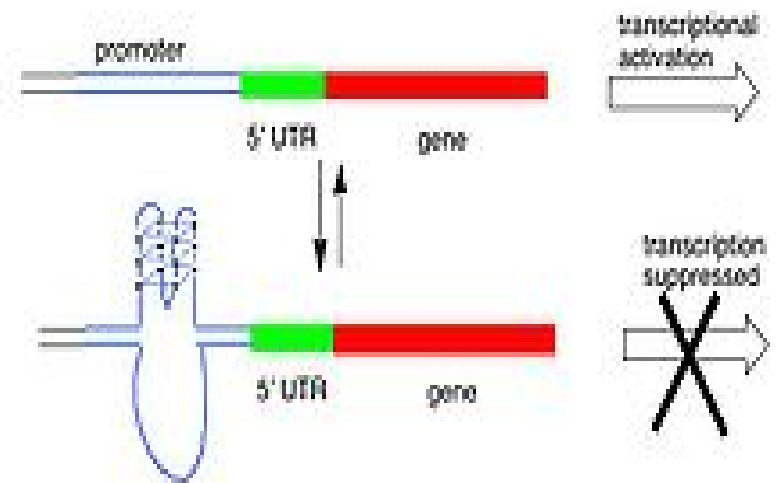
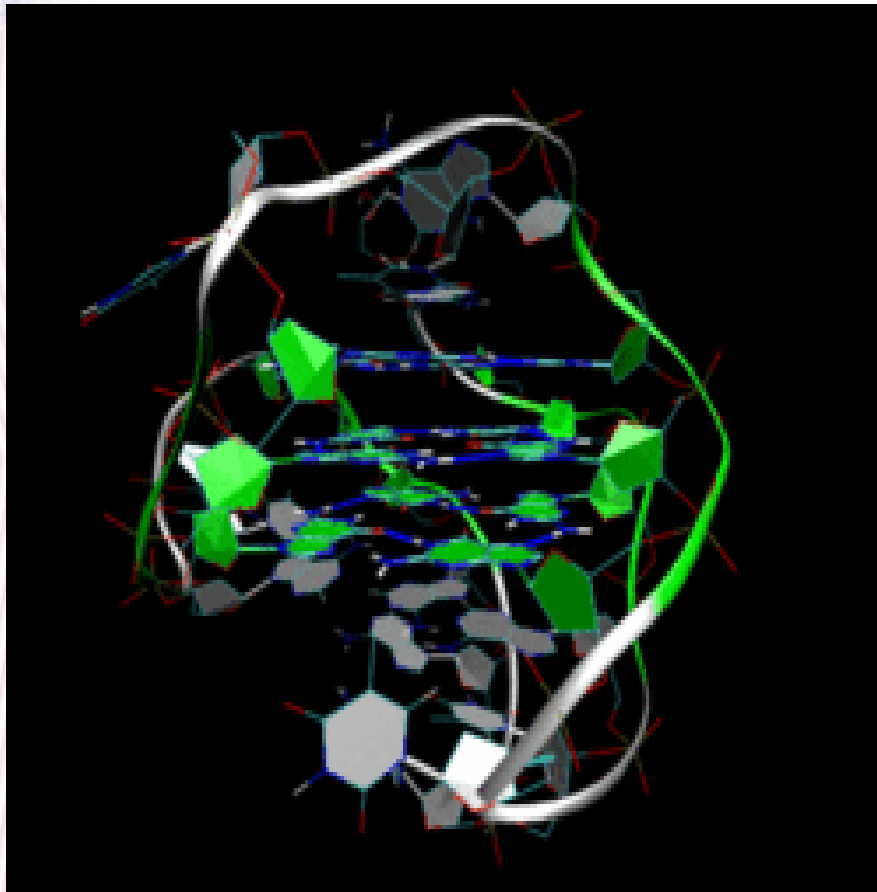
# G-Spots

- G-Spot
- GGGG+
- Biochemical effect – Alternative Splicing
- G-Quadruplexes

# G-Quadruplexes



# G-Quadruplexes



# Microarrays

- Measure gene expression
- ~25 bases
- Probes arranged in pairs PM/MM

# Misleading information

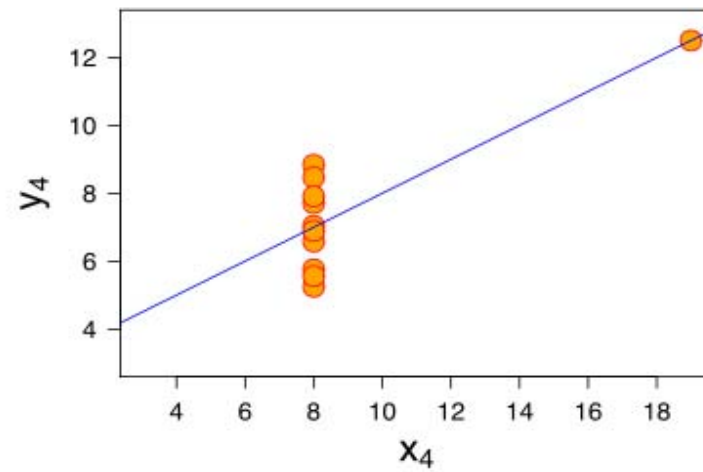
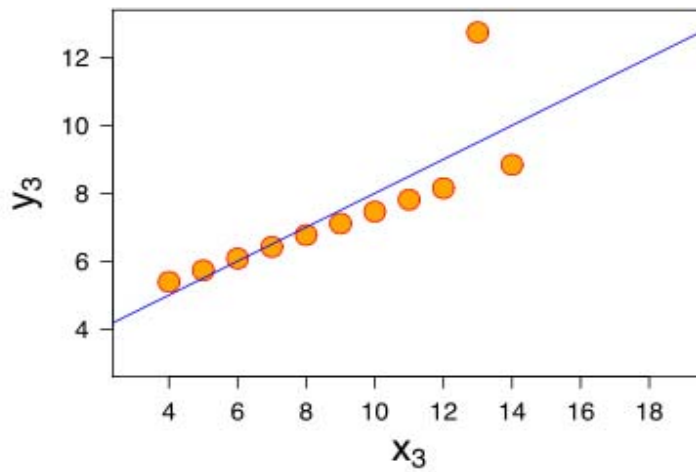
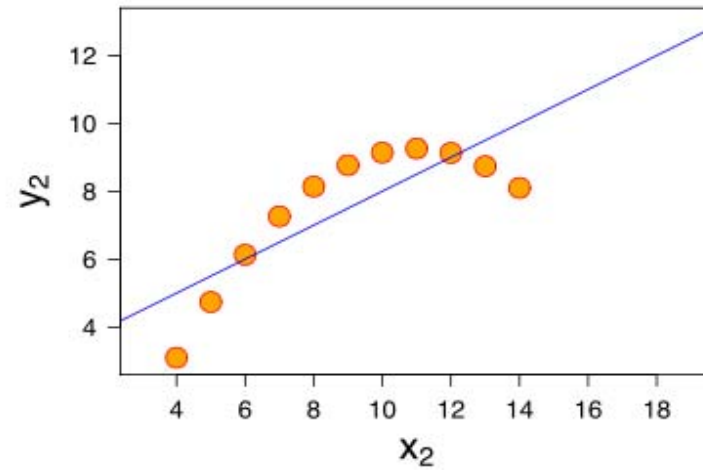
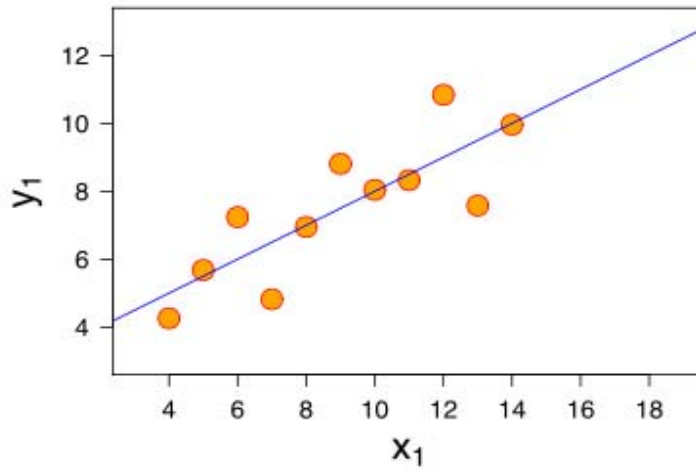
- Exclude from analysis
- NCBI – Gene Expression Omnibus
- ~40% of probsets 1+ GSpots


# **GSEs – Gene expression Series**

- 6.000 Datasets relating ~300 GSEs
- Pearson Coefficient between Probe pairs



# Correlation



|   |           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|---|-----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|  | altsplice |    |    | 9  | -2 | 3  | 5  | 6  | 9  | 9  | 5  | 5  | 3  | 5  | 10 |
| 6   | 4         | 5  | 5  | 5  | -2 | 4  | 5  | 6  | 5  | 5  | 2  | 5  | 4  | 10 | 5  |
| 7   | 3         | 5  | 4  | 2  | -3 | 2  | 3  | 5  | 4  | 4  | 1  | 6  | 10 | 4  | 3  |
| 6   | 3         | 4  | 5  | 5  | -2 | 3  | 6  | 4  | 5  | 5  | 5  | 10 | 6  | 5  | 5  |
| 2   | 1         | 1  | 4  | 5  | 2  | 2  | 3  | 2  | 4  | 4  | 10 | 5  | 1  | 2  | 5  |
| 6   | 4         | 4  | 5  | 9  | -2 | 2  | 4  | 5  | 10 | 10 | 4  | 5  | 4  | 5  | 9  |
| 6   | 4         | 4  | 5  | 9  | -2 | 2  | 4  | 5  | 10 | 10 | 4  | 5  | 4  | 5  | 9  |
| 7   | 5         | 6  | 6  | 4  | -4 | 4  | 5  | 10 | 5  | 5  | 2  | 4  | 5  | 6  | 6  |
| 6   | 3         | 3  | 5  | 4  | 0  | 7  | 10 | 5  | 4  | 4  | 3  | 6  | 3  | 5  | 5  |
| 4   | 2         | 2  | 5  | 3  | 1  | 10 | 7  | 4  | 2  | 2  | 2  | 3  | 2  | 4  | 3  |
| -4  | -3        | -4 | -1 | 0  | 10 | 1  | 0  | -4 | -2 | -2 | 2  | -2 | -3 | -2 | -2 |
| 5   | 3         | 4  | 6  | 10 | 0  | 3  | 4  | 4  | 9  | 9  | 5  | 5  | 2  | 5  | 9  |
| 6   | 3         | 4  | 10 | 6  | -1 | 5  | 5  | 6  | 5  | 5  | 4  | 5  | 4  | 5  | 6  |
| 5   | 8         | 10 | 4  | 4  | -4 | 2  | 3  | 6  | 4  | 4  | 1  | 4  | 5  | 5  | 4  |
| 4   | 10        | 8  | 3  | 3  | -3 | 2  | 3  | 5  | 4  | 4  | 1  | 3  | 3  | 4  | 4  |
| 10  | 4         | 5  | 6  | 5  | -4 | 4  | 6  | 7  | 6  | 6  | 2  | 6  | 7  | 6  | 6  |



# Potential for the formation

- Average distance about 3nm
- Can come into contact
- Stable up to 90°
- Remaining probes more space

# Steps

- Download files from NCBI-GEO
- Create correlation coefficients
- Exclude Data
- Identify probes with G-Quadruplex