

**Supplemental Table 2: Shh protein and estrogen levels in CSF**

Sample Number	Age	Sex	shh protein level (pg/ml)	estrogen level (pg/ml)
1	63	Female	78.552	80.4562
2	48	Male	329.54118	118.4834
3	51	Female	422.62326	128.2442
4	38	Female	312.91938	176.2774
5	57	Female	124.26195	62.7896
6	69	Male	247.26327	74.6908
7	46	Male	81.04527	87.9594
8	45	Male	87.69399	87.5602
9	41	Female	204.87768	85.8528
10	62	Female	83.53854	21.3406
11	65	Male	129.24849	64.5362
12	63	Female	64.42347	71.4128
13	58	Female	99.32925	103.4108
14	61	Male	36.16641	87.031
15	79	Male	232.30365	57.3756
16	63	Male	176.62062	73.0868
17	47	Female	356.96715	146.2598
18	43	Female	259.72962	158.6058
19	58	Male	61.9302	84.628
20	49	Male	125.92413	57.2488