



The serotonin transporter sustains human brown adipose tissue thermogenesis

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SUPPLEMENTARY INFORMATION

SUPPLEMENTARY TABLE 1 *PARTICIPANT CHARACTERISTICS FOR ADIPOSE TISSUE COLLECTIONS.*

Experiment/ Subject number	Operation	Underlying diagnosis	Age (years)	Sex	BMI (Kg/m²)
Whole tissue mRNA and histology					
1	Parathyroidectomy	Primary hyperparathyroidism	66	Female	28.3
2	Parathyroidectomy	Primary hyperparathyroidism	63	Female	33.3
3	Thyroid lobectomy	Papillary carcinoma of thyroid	45	Female	26.5
4	Thyroid lobectomy	Follicular adenoma	48	Female	17.8
5	Parathyroidectomy	Primary hyperparathyroidism	47	Male	23.4
6	Parathyroidectomy	Primary hyperparathyroidism	24	Male	27.7
7	Thyroidectomy	Graves' disease	27	Female	30.1
8	Thyroidectomy	Graves' disease	26	Female	20.9
9	Parathyroidectomy	Primary hyperparathyroidism	62	Female	28.4
10	Parathyroidectomy	Primary hyperparathyroidism	56	Male	27.2
Cultured adipocytes for RNA seq					
1	Thyroid lobectomy	Follicular thyroid carcinoma	41	Female	27.5
2	Parathyroidectomy	Primary hyperparathyroidism	59	Female	24.5
3	Thyroidectomy	Follicular thyroid carcinoma	52	Female	39.4
4	Thyroidectomy	Multinodular goitre	50	Female	22.3
Adipocytes for qPCR					
1	Parathyroidectomy	Primary hyperparathyroidism	51	Female	26.3
2	Thyroid lobectomy	Benign hyperplastic nodule	41	Female	28.6
3	Thyroidectomy	Follicular carcinoma	35	Female	37.0
4	Parathyroidectomy	Primary hyperparathyroidism	70	Female	32.5
5	Parathyroidectomy	Primary hyperparathyroidism	58	Female	22.9
6	Parathyroidectomy	Primary hyperparathyroidism	59	Female	24.4
7	Thyroid lobectomy	Papillary thyroid carcinoma	36	Female	28.0
8	Parathyroidectomy	Primary hyperparathyroidism	61	Female	23.3
9	Parathyroidectomy	Primary hyperparathyroidism	67	Female	18.7
10	Parathyroidectomy	Primary hyperparathyroidism	62	Female	30.8
11	Parathyroidectomy	Primary hyperparathyroidism	63	Female	33.9
12	Parathyroidectomy	Primary hyperparathyroidism	68	Female	21.9
Serotonin uptake					
1	Parathyroidectomy	Primary hyperparathyroidism	45	Female	40.8
2	Parathyroidectomy	Primary hyperparathyroidism	60	Female	24.7
3	Parathyroidectomy	Primary hyperparathyroidism	51	Female	26.3
4	Parathyroidectomy	Primary hyperparathyroidism	59	Male	39.4
5	Thyroid lobectomy	Multinodular goitre	41	Female	28.6
6	Parathyroidectomy	Primary hyperparathyroidism	61	Female	22.6
Serotonin Respirometry					
1	Parathyroidectomy	Primary hyperparathyroidism	74	Female	21.0
2	Parathyroidectomy	Primary hyperparathyroidism	58	Female	22.9
3	Parathyroidectomy	Primary hyperparathyroidism	59	Female	24.4

4	Parathyroidectomy	Primary hyperparathyroidism	49	Female	36.0
5	Parathyroidectomy	Primary hyperparathyroidism	47	Female	37.6
6	Thyroid Lobectomy	Papillary carcinoma of thyroid	36	Female	28.0
7	Parathyroidectomy	Primary hyperparathyroidism	69	Female	30.5
8	Parathyroidectomy	Primary hyperparathyroidism	62	Female	30.8
9	Thyroid lobectomy	Follicular adenoma	29	Female	21.2
10	Parathyroidectomy	Primary hyperparathyroidism	62	Female	22.4
11	Thyroidectomy	Graves' disease	68	Female	28.3
12	Thyroid lobectomy	Hurthle cell carcinoma	61	Female	30.5
13	Parathyroidectomy	Primary hyperparathyroidism	76	Male	26.5
14	Parathyroidectomy	Primary hyperparathyroidism	63	Female	27.1
Serotonin regulation of UCP1					
1	Parathyroidectomy	Primary hyperparathyroidism	21	Female	30.1
2	Parathyroidectomy	Primary hyperparathyroidism	52	Female	35.7
3	Parathyroidectomy	Primary hyperparathyroidism	36	Male	37.0
4	Parathyroidectomy	Primary hyperparathyroidism	56	Female	31.2
5	Parathyroidectomy	Primary hyperparathyroidism	70	Female	27.9
6	Parathyroidectomy	Primary hyperparathyroidism	58	Female	23.8
7	Parathyroidectomy	Primary hyperparathyroidism	70	Female	32.5
8	Parathyroidectomy	Primary hyperparathyroidism	74	Female	21.0
9	Parathyroidectomy	Primary hyperparathyroidism	57	Female	49.5
10	Parathyroidectomy	Primary hyperparathyroidism	58	Female	22.9
11	Parathyroidectomy	Primary hyperparathyroidism	59	Female	24.4
12	Parathyroidectomy	Primary hyperparathyroidism	49	Female	36.0
13	Parathyroidectomy	Primary hyperparathyroidism	55	Female	27.5
14	Parathyroidectomy	Primary hyperparathyroidism	47	Female	37.6
Serotonin/ SSRI respirometry					
1	Thyroid lobectomy	Hurthle cell carcinoma	54	Female	23.7
2	Parathyroidectomy	Primary hyperparathyroidism	76	Male	26.5
3	Parathyroidectomy	Primary hyperparathyroidism	63	Female	27.1
4	Parathyroidectomy	Primary hyperparathyroidism	36	Female	19.7
5	Graves' disease	Thyroidectomy	51	Female	23.2
6	Parathyroidectomy	Primary hyperparathyroidism	40	Male	26.6
7	Parathyroidectomy	Primary hyperparathyroidism	26	Male	31.4
8	Graves' disease	Thyroidectomy	65	Male	19.8
9	Multinodular goitre	Thyroidectomy	32	Female	24.9
Serotonin/ SSRI regulation of UCP1					
1	Thyroid lobectomy	Papillary carcinoma of thyroid	36	Female	28.0
2	Parathyroidectomy	Primary hyperparathyroidism	69	Female	30.5
3	Parathyroidectomy	Primary hyperparathyroidism	67	Female	18.7
4	Parathyroidectomy	Primary hyperparathyroidism	62	Female	30.8
5	Parathyroidectomy	Primary hyperparathyroidism	68	Female	21.9
6	Thyroidectomy	Graves' disease	68	Female	28.3
7	Parathyroidectomy	Primary hyperparathyroidism	76	Male	26.5
8	Parathyroidectomy	Primary hyperparathyroidism	31	Female	32.1
9	Parathyroidectomy	Primary hyperparathyroidism	71	Female	29.3

5-HT receptor regulation of UCP1					
1	Parathyroidectomy	Primary hyperparathyroidism	70	Female	28.5
2	Parathyroidectomy	Primary hyperparathyroidism	68	Female	29.4
3	Parathyroidectomy	Primary hyperparathyroidism	60	Female	31.5
4	Parathyroidectomy	Primary hyperparathyroidism	36	Female	50.3
5	Thyroidectomy	Graves' disease	53	Female	27.3
6	Thyroidectomy	Hurthle cell adenomas	47	Female	19.8
7	Thyroidectomy	Graves' disease	38	Female	27.5
8	Thyroidectomy	Graves' disease	65	Male	23.5
9	Parathyroidectomy	Primary hyperparathyroidism	51	Male	28.0
10	Thyroid Lobectomy	Multinodular goitre	64	Female	30.8
HTR2A/B knockdown					
1	Thyroidectomy	Follicular adenoma	67	Male	33.7
2	Parathyroidectomy	Primary hyperparathyroidism	49	Female	22.9
3	Graves' disease	Thyroidectomy	65	Male	19.8
4	Parathyroidectomy	Primary hyperparathyroidism	73	Female	24.0
5	Multinodular goitre	Thyroidectomy	32	Female	24.9
6	Parathyroidectomy	Primary hyperparathyroidism	59	Female	29.8