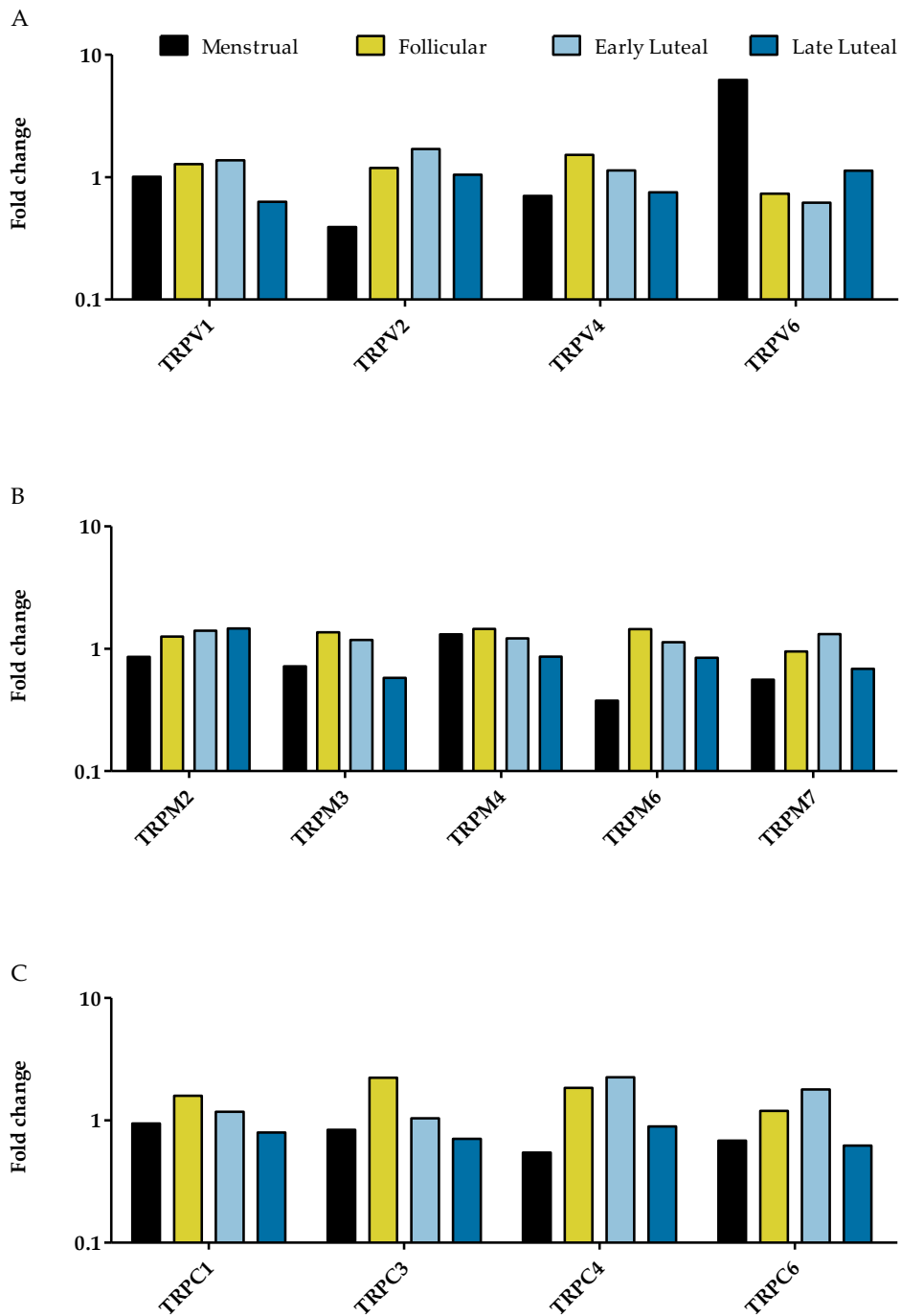




1

2 **5. Supplementary material**



3

4

**Figure S1. The fold change of mRNA expression to controls [7] (a) TRPV-A; (b) TRPM; (c) TRPC.**

5

Data shown as  $2^{-(\Delta\Delta Cq)}$ . ( $\Delta\Delta Cq = \Delta Cq_{\text{endometriosis}} - \Delta Cq_{\text{control}}$ )

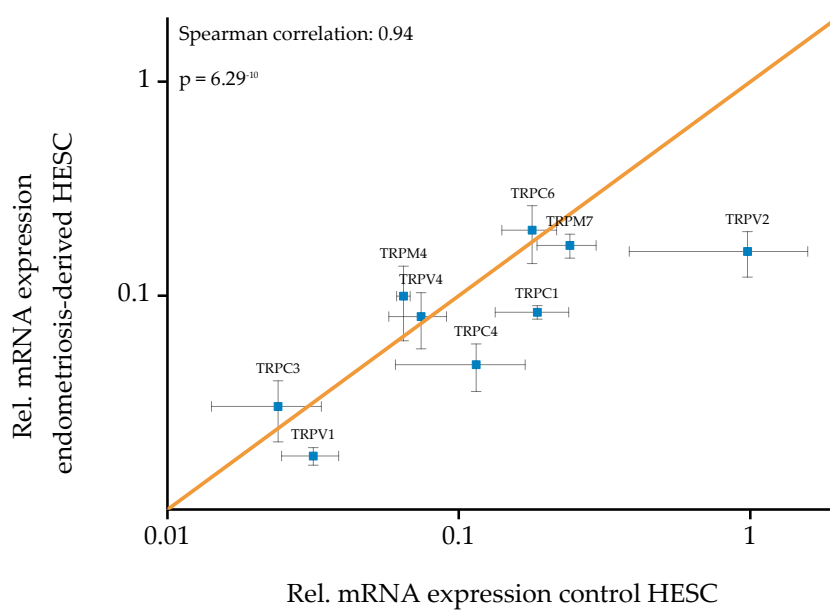
6

7

8

9

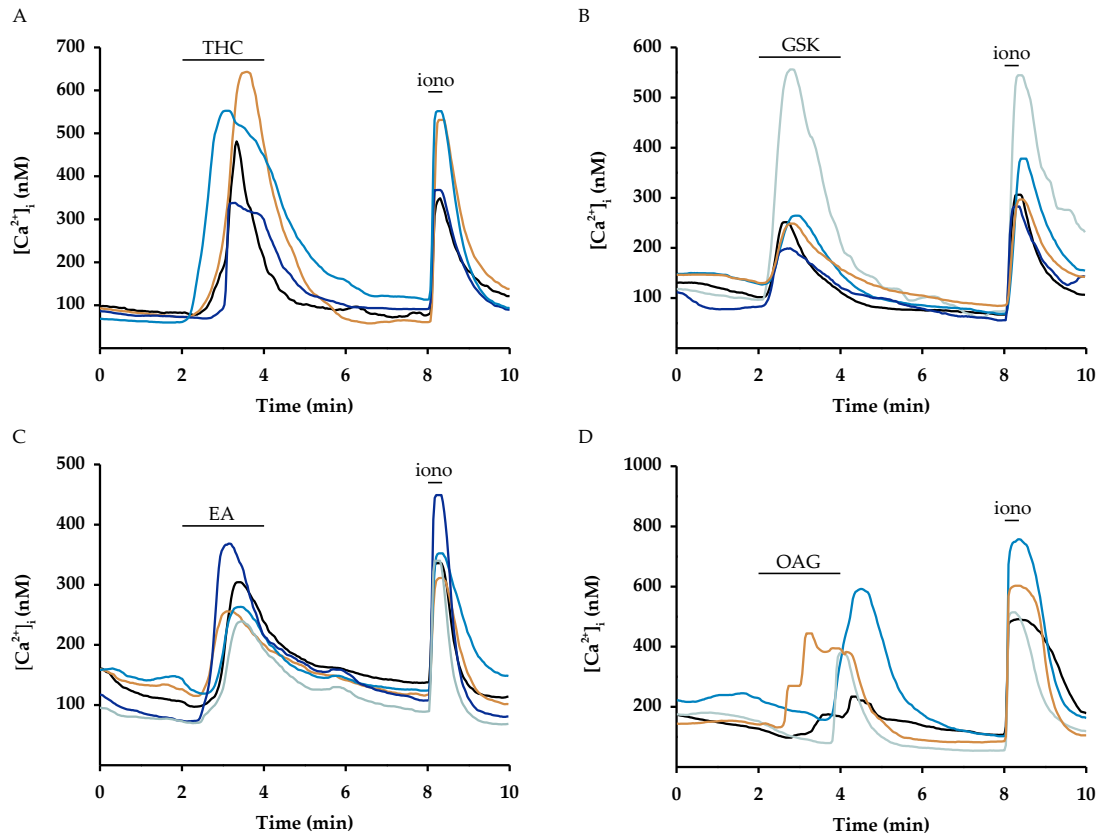
10



11  
 12  
 13

14 **Figure S2. Correlation between the mRNA expression of TRP channels in control hESC (n = 3) and**  
 15 **endometriosis-derived hESC (n = 4).** The correlation was assessed using the non-parametric  
 16 Spearman correlation test.

17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29



30

31

32 **Figure S3. Representative traces of individual endometriosis-derived hESC illustrating TRP**  
 33 **functionality (a-d)** Application of respectively 50  $\mu\text{M}$  THC, 10 nM GSK, 250 nM EA and 100  $\mu\text{M}$  OAG  
 elicit a robust and reversible influx of calcium in hESC derived from endometriosis-patients.

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

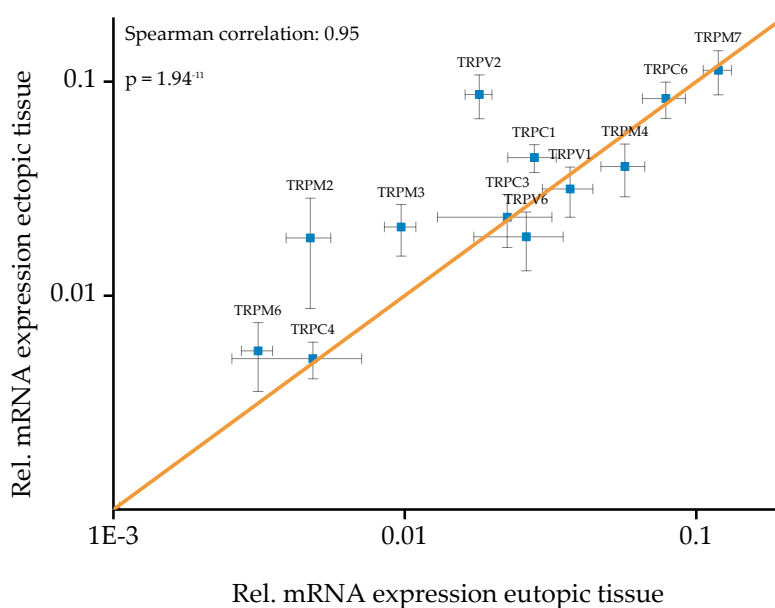
55

56

57

58

59  
60



61  
62  
63

64  
65  
66

**Figure S4. Correlation between the mRNA expression of TRP channels in paired eutopic and ectopic tissue samples (n=3).** The correlation was assessed using the non-parametric Spearman correlation test.

67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86



ENDOMETRIAL BIOPSIES							
Sample	Endometriosis stadium	AFS score	Cycle phase	Age (years)	BMI (kg/m <sup>2</sup> )	Smoking	Time interval between menses
1	II	10	Menstrual	38	23.7	No	Normal
2	II	14	Menstrual	37	23.3	No	Normal
3	II	8	Menstrual	31	16.2	No	Normal
4	II	12	Menstrual	28	18.9	Yes	Normal
5	II	15	Menstrual	35	26.6	No	Normal

1	II	12	Follicular	32	21.8	No	Normal
2	II	10	Follicular	34	26.6	No	Normal
3	II	6	Follicular	21	19	Yes	Normal
4	II	10	Follicular	33	21.6	No	Normal
5	II	6	Follicular	29	21.9	No	Normal
6	II	8	Follicular	34	25.3	No	Normal

1	II	12	Early luteal	37	nd	nd	nd
2	II	18	Early luteal	33	20.8	No	Normal
3	II	10	Early luteal	30	29.8	No	Normal
4	II	6	Early luteal	35	19.6	No	Normal

1	II	8	Late luteal	31	20.4	No	Normal
2	II	8	Late luteal	26	20.5	Yes	Normal
3	II	10	Late luteal	31	17.6	No	Normal

87

88

89

**Table S1. Demographics and information of cycle phases/days for each endometrial biopsy.**  
Normal time between menses equals 24–38 days; nd: not determined due to lack of information.

90

91

92

93

94

95

96

97

98

99

100

101

102

103

104

PRIMARY HUMAN ENDOMETRIAL STROMAL CELLS											
Sample	Endometriosis stadium	AFS score	Cycle phase	Age (years)	BMI (kg/m <sup>2</sup> )	Smoking	Time interval between menses	Experimental destination			
								qPCR	Ca <sup>2+</sup>	Prol.	Migr.
1	0	n/a	Luteal	29	19.2	Occasionally	Normal		X		
2	0	n/a	Luteal	31	21.2	No	Normal		X		
3	0	n/a	Luteal	26	31.6	Yes	Normal	X	X		
4	0	n/a	Luteal	40	18.6	No	Normal	X	X	X	X
5	0	n/a	Luteal	27	25.3	Yes	Infrequent	X	X	X	X
6	0	n/a	Luteal	29	24.6	No	Normal		X	X	X
7	0	n/a	Luteal	39	28	No	Normal		X	X	X

1	II	8	Luteal	31	20.2	No	Normal		X	X	X
2	II	12	Luteal	28	23	No	Normal	X	X		
3	II	8	Luteal	36	19.1	No	Normal		X	X	X
4	II	8	Luteal	30	20.8	No	Normal	X	X	X	X
5	II	8	Luteal	37	31.6	No	Normal	X	X		
6	II	8	Luteal	28	21.5	No	Normal	X	X	X	X
7	III	16	Luteal	34	24.5	No	Normal		X		
8	III	40	Luteal	27	19.8	No	Normal		X		

105 **Table S2. Demographics and reproductive information for each endometrial biopsy.** Normal time  
 106 between menses equals 24–38 days; n/a: not applicable.

107  
 108  
 109  
 110  
 111  
 112  
 113  
 114  
 115  
 116  
 117  
 118  
 119  
 120  
 121  
 122  
 123  
 124  
 125

PAIRED EUTOPIC AND ECTOPIC TISSUE								
Sample	Endometriosis stadium	AFS score	Cycle phase	Age (years)	BMI (kg/m <sup>2</sup> )	Smoking	Time interval between menses	Ectopic lesion
1	II	8	Follicular	30	23.6	No	Normal	Superficial lesion; pararectal
2	II	8	Follicular	25	29.4	No	Normal	Superficial lesion; pararectal
3	II	10	Follicular	36	21.5	No	Normal	Superficial lesion; uterovesicular

126 **Table S3. Demographics and reproductive information of the paired eutopic and ectopic tissues.**  
 127 Normal time between menses equals 24–38 days

128  
 129  
 130  
 131  
 132  
 133  
 134  
 135  
 136  
 137  
 138  
 139  
 140  
 141  
 142  
 143  
 144  
 145  
 146  
 147  
 148  
 149  
 150  
 151  
 152  
 153  
 154  
 155  
 156  
 157  
 158  
 159  
 160  
 161  
 162  
 163  
 164  
 165  
 166  
 167  
 168

TAQMAN GENE EXPRESSION ASSAYS					
Gene name	Assay ID	RefSeq ID	Exon boundary	Assay location	Amplicon length
TRPA1	Hs00175798_m1	NM_007332.2	2–3	441	124
TRPV1	Hs00218912_m1	NM_018727.5	8–9	1540	94
TRPV2	Hs00901640_m1	NM_016113.4	14–15	2591	72
TRPV3	Hs01000530_m1	NM_001258205.1	14–15	2128	121
TRPV4	Hs01099348_m1	NM_001177428.1	2–3	586	65
TRPV5	Hs00219765_m1	NM_019841.4	7–8	1176	96
TRPV6	Hs01114089_g1	NM_018646.4	7–8	1138	59
TRPM1	Hs00931865_m1	NM_001252020.1	2–3	448	91
TRPM2	Hs01066071_m1	NM_003307.3	9–10	1419	74
TRPM3	Hs00257553_m1	NM_001007470.1	3–4	356	83
TRPM4	Hs00214167_m1	NM_001195227.1	12–13	1852	60
TRPM5	Hs00175822_m1	NM_014555.3	18–19	1795	79
TRPM6	Hs01019353_m1	NM_001177310.1	13–14	1555	68
TRPM7	Hs00918956_m1	NM_017672.4	38–39	5745	148
TRPM8	Hs00375481_m1	NM_024080.4	2–3	157	106
TRPC1	Hs00608195_m1	NM_001251845.1	6–7	1097	137
TRPC3	Hs00162985_m1	NM_001130698.1	4–5	1416	58
TRPC4	Hs00211805_m1	NM_001135955.1	8–9	2312	76
TRPC5	Hs00202960_m1	NM_012471.2	6–7	2623	75
TRPC6	Hs00989190_m1	NM_004621.5	3–4	1558	87
TRPC7	Hs00220638_m1	NM_001167576.1	4–5	1458	55
ACTB	Hs01060665_g1	NM_001101.3	2–3	208	63
GAPDH	Hs02758991_g1	NM_001256799.2	6–7	752	93
HPRT1	Hs02800695_m1	NM_000194.2	2–3	297	82
PGK-1	Hs00943178_g1	NM_000291.2	5–6	697	73
TPB	Hs00427620_m1	NM_001172085.1	2–3	578	91

169

170

Table S4. List of used Taqman genes (Applied Biosystems).