

Supplementary Table 1: Summary of 35 QTL regulating responses to estrogen in 5 tissues of rats and mice.

Phenotype	Strains	Locus	Markers	Reference
A. Rat Mammary Gland				
latency, tumor number	ACI x COP	<i>Emca1</i>	D5Rat30-D5Rat53	(Gould et al. 2004)
latency	ACI x COP	<i>Emca2</i>	D18Rat21	(Gould et al. 2004)
latency, tumor number	ACI x COP	<i>Emca3</i>	D2Rat16	(Colletti et al. 2014; Shull et al. 2007)
latency, tumor number	ACI x COP	<i>Emca4</i>	D7Rat19	(Schaffer et al. 2013)
latency, tumor number	ACI x COP	<i>Emca5</i>	D3Rat114	(Schaffer et al. 2013)
tumor number	ACI x COP	<i>Emca6</i>	D4Rat103	(Schaffer et al. 2013)
tumor number	ACI x COP	<i>Emca7</i>	D6Rat22	(Schaffer et al. 2013)
latency, tumor number	ACI x COP	<i>Emca8</i>	D5Rat95	(Schaffer et al. 2013)
latency, tumor number	ACI x COP	<i>Emca9</i>	D18Rat30	(Colletti et al. 2014; Shull et al. 2007)
B. Mouse Uterus				
weight	C57BL6/J x C3H/HeJ	<i>Est2</i>	<i>D5Mit296</i>	(Roper et al. 1999)
weight	C57BL6/J x C3H/HeJ	<i>Est3</i>	<i>D11Mit67</i>	(Roper et al. 1999)
eosinophils	C57BL6/J x C3H/HeJ	<i>Est1</i>	<i>D4Mit6</i>	(Roper et al. 1999)
eosinophils	C57BL6/J x C3H/HeJ	<i>Est4</i>	<i>D10Mit180</i>	(Roper et al. 1999)
eosinophils	C57BL6/J x C3H/HeJ	<i>Est5</i>	<i>D16Mit44</i>	(Roper et al. 1999)
C. Rat Uterus				
pyometritis	BN x ACI	<i>Eutr1</i>	<i>D5Rat190</i>	(Gould et al. 2005)
pyometritis	F344.BN-congenic rat	<i>Eutr2</i>	<i>D5Mgh17-D5Rat205</i>	(Pandey et al. 2005)
D. Rat Uterus				
pituitary weight, DNA content	F344 x BN	<i>Edpm2-1</i>	<i>D2Mgh14-D2Mit4</i>	(Wendell et al. 2000; Wendell and Gorski 1997)
pituitary weight	F344 x BN	<i>Edpm2-2</i>	<i>D2Mgh15</i>	(Wendell and Gorski 1997)
pituitary weight	F344 x BN	<i>Edpm3</i>	<i>D3Mit7</i>	(Wendell and Gorski 1997)
pituitary weight	F344 x BN	<i>Edpm5</i>	<i>D5Mit11</i>	(Wendell and Gorski 1997)
pituitary weight	F344 x BN	<i>Edpm9</i>	<i>D9Mgh2</i>	(Wendell and Gorski 1997)
pituitary weight, DNA content	(F344xBN)F1xF344	<i>Edpm9-2</i>	<i>D9Rat31</i>	(Wendell et al. 2000)
pituitary weight	ACI x COP	<i>Ept1</i>	D6Rat80	(Strecker et al. 2005)
pituitary weight	ACI x COP	<i>Ept2</i>	D3Rat37	(Strecker et al. 2005)
pituitary weight	BN x ACI	<i>Ept5</i>	D4Mgh7	(Shull et al. 2007)
pituitary weight	ACI x COP	<i>Ept6</i>	D3Mgh9	(Strecker et al. 2005)
pituitary weight	BN x ACI	<i>Ept7</i>	D7Rat19	(Shull et al. 2007)
pituitary weight	ACI x COP	<i>Ept9</i>	D10Mit7	(Strecker et al. 2005)
pituitary weight	ACI x COP	<i>Ept10</i>	D1Rat119	(Strecker et al. 2005)
pituitary weight	ACI x COP	<i>Ept13</i>	D1Rat192	(Strecker et al. 2005)
E. Rat Thymus				
Thymic atrophy	BN X ACI	<i>Esta1</i>	<i>D10Mgh10</i>	(Gould et al. 2006)
Thymic atrophy	BN X ACI	<i>Esta2</i>	<i>D2Rat61</i>	(Gould et al. 2006)
Thymic atrophy	BN X ACI	<i>Esta3</i>	<i>D2Rat34</i>	(Gould et al. 2006)
F. Rat Testes				
Testicular weight	LEXF/FXLE		D7Mit4	(Tachibana et al. 2006)
Testicular weight	LEXF/FXLE		D1Wox25	(Tachibana et al. 2006)

A. Mammary tumor phenotypes in rats were observed following chronic administration of 17 β -estradiol. **B.** Uterine responses in ovariectomized mice were induced by acute treatment with 17 β -estradiol for 4 days. **C.** Uterine phenotypes in rats were induced by chronic administration of diethylstilbestrol. **D.** Phenotypes in the pituitary of rats were induced by chronic administration of either 17 β -estradiol or diethylstilbestrol. **E.** Phenotypes in the thymus of rats were induced by chronic administration of either 17 β -estradiol or diethylstilbestrol. **F.** Testes phenotypes in rats were induced by chronic administration of diethylstilbestrol. Details of experiments can be found in the references provided.

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