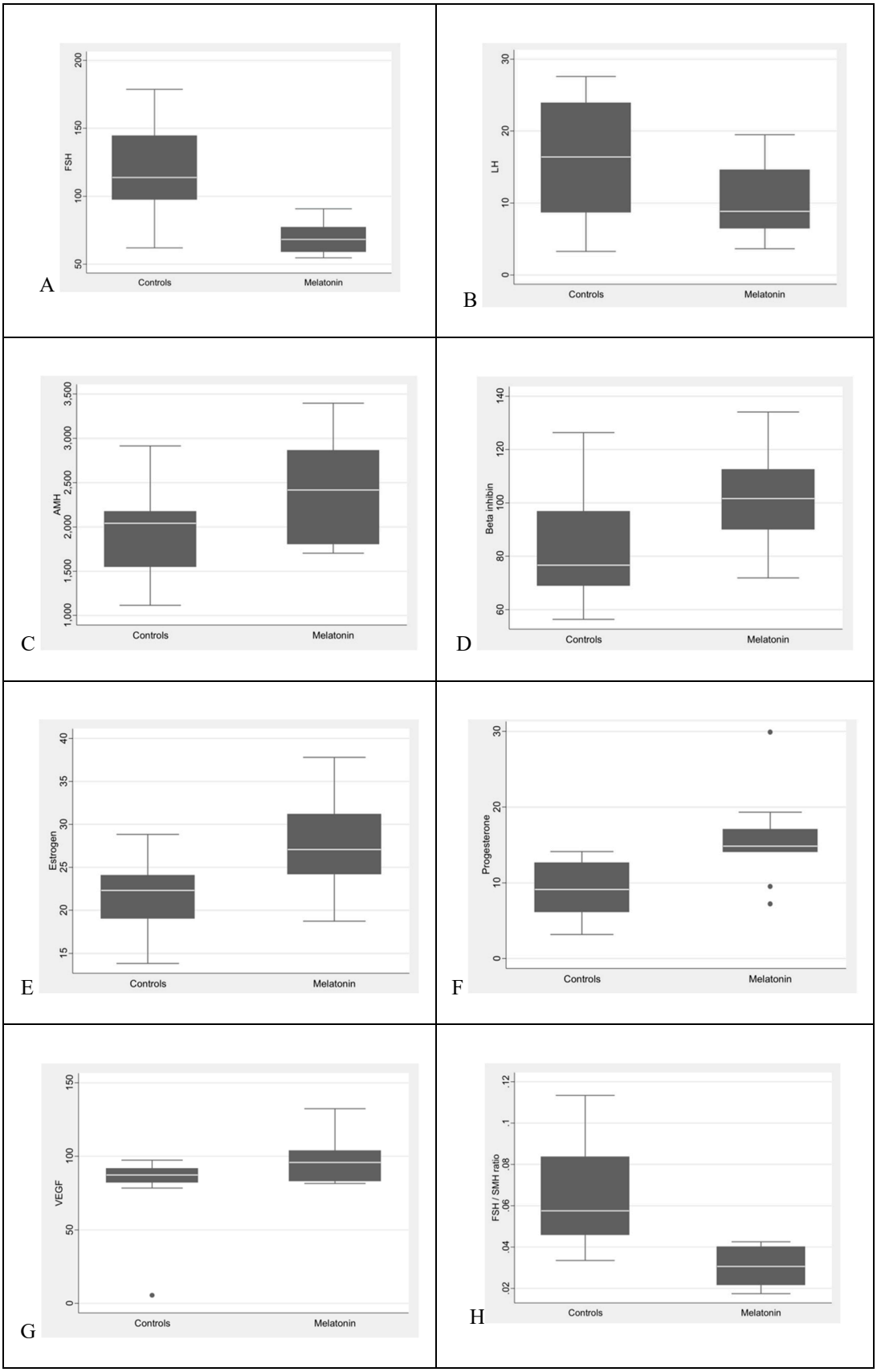


Figure S1. The biochemical data in the animals that underwent transplantation, compared melatonin group (MG) with control group (CG). The FSH levels in the MG were lower than those in the CG $p = 0.03$. The FSH/AMH ratios were multiplied by 100, resulting in the following values: GM which was

significantly lower than that of CG $p < 0.01$. Differences in LH, estradiol, progesterone, and inhibin B were not found between the groups. VEGF-A levels did not show a statistically significant difference between the groups. Abbreviations: **A:** FSH (follicle-stimulating hormone); **B:** LH (luteinizing hormone); **C:** AMH (anti-Mullerian hormone); **D:** inhibin B; **E:** estradiol; **F:** progesterone; **G:** VEGF; **H:** FSH/AMH *100 ratio

Table S1: Comparison of quantitative data between VEGF and biochemical analyses. Student T-test

	Control					Melatonin					P
	Med	Sd	Median	Q1	Q3	Med	Sd	Median	Q1	Q3	
VEGF	80.19	26.93	87.27	82.35	91.61	98.20	16.88	95.80	83.35	103.80	0.1508
VEGF/AMH	0.04	0.01	0.04	0.04	0.05	0.04	0.01	0.04	0.04	0.05	0.9397
VEGF/beta inhibin	1.01	0.38	1.05	0.95	1.24	0.99	0.17	0.94	0.90	1.05	0.2899
VEGF/Estrogen	3.61	1.28	3.65	3.42	4.20	3.69	0.76	3.53	3.34	4.25	0.5453
VEGF/FSH	0.73	0.36	0.79	0.48	0.99	1.47	0.37	1.41	1.26	1.73	0.0007*
VEGF/LH	7.94	7.82	5.60	2.99	10.52	13.04	8.38	11.39	7.10	15.72	0.0494*
VEGF/progesterone	10.94	7.80	8.03	6.92	12.67	6.98	2.62	6.11	5.88	8.52	0.1736
FSH / AMH	0.07	0.03	0.06	0.05	0.08	0.03	0.01	0.03	0.02	0.04	0.0007

Abbreviations: CG: control group; MG: melatonin group; VEGF: Vascular Endothelial Growth Factor; GPx: Glutathione Peroxidase; FSH: follicle-stimulating hormone; AMH: anti-müllerian hormone; LH: luteinizing hormone. (*) significant p values.

Table S2- Spearman's correlation test in the Melatonin group

Internal Theca Index	Total interstitial cell index	0.9179
Internal theca intensity GPx	Luteal body intensity GPx	1
total interstitial cell index	Total intestitial cell index/VEGF	0.9103
Internal theca index/VEGF	Internal theca intensity GPx	0.7651
Internal theca index/VEGF	interstitial cell intensity GPx	0.8056
Internal theca index/VEGF	Luteal body area GPx	0.7981
Internal theca index/VEGF	total interstitial cell index	0.7597
Luteal body area GPx	Luteal body intensity GPx	0.8291
Luteal body area GPx	Total intestitial cell index/VEGF	0.8718
AMH	Estrogen	0.8789
AMH	LH	-0.8274
AMH	VEGF/AMH	-0.7738
AMH	VEGF/LH	0.7656
Estrogen	VEGF/LH	0.8718
FSH	VEGF/FSH	-0.7274
LH	VEGF/AMH	0.7636
LH	VEGF/LH	-0.8078
Progesterone	VEGF/progesterone	-0.7941
VEGF	VEGF/FSH	0.8214
VEGF/AMH	VEGF/Estrogen	0.8751
VEGF/beta inhibin	VEGF/progesterone	0.7273

Spearman correlation analysis in the melatonin-treated group, showing significant associations between biochemical parameters and the expression of VEGF-A and GPx1/2 in rat ovarian tissue, presented in decreasing order of

statistical significance. Abbreviations: VEGF: Vascular Endothelial Growth Factor; GPx: Glutathione Peroxidase; FSH: follicle-stimulating hormone; AMH: anti-müllerian hormone; LH: luteinizing hormone.

Table S3 - Linear regression - VEGF -A

	Coef	95%CI min	95%CI max	p
AMH	0.025	0.008	0.041	0.007
Beta inhibin	0.574	0.112	1.035	0.018
Progesterone	1.669	-0.086	3.425	0.061
Estrogen	2.603	0.991	4.215	0.003
FSH	-0.185	-0.486	0.116	0.213
LH	-1.549	-2.901	-0.198	0.027
Internal theca area GPx	-5.641	-7.630	-3.652	0.001
Internal theca Index	3.610	1.113	6.107	0.008
Internal theca intensity GPx	1.185	-11.841	14.211	0.846
interstitial cell area GPx	-2.658	-3.602	-1.715	0.001
interstitial cell intensity GPx	-2.625	-3.566	-1.684	0.001
Luteal body area GPx	-5.143	-7.399	-2.888	0.001
Total intestitical cell index/VEGF	-1.262	-1.797	-0.727	0.001
VEGF/AMH	1258.258	513.359	2003.158	0.002
VEGF/beta inhibin	48.657	15.455	81.859	0.006
VEGF/Estrogen	16.067	7.835	24.299	0.001
VEGF/FSH	34.032	18.720	49.345	0.001
VEGF/LH	1.443	0.223	2.663	0.023

Abbreviations: CI: confidence interval; FSH: follicle-stimulating hormone; AMH: Anti-Mullerian hormone; LH: luteinizing hormone; VEGF: Vascular Endothelial Growth Factor; GPx: Glutathione Peroxidase.

Table S4. Linear regression - VEGF - Melatonin group.

	Coef	95%CI min	95%CI máx.	P
VEGF/LH	0.961	-0.481	2.403	0.163
VEGF/FSH	37.801	16.403	59.199	**0.004**
VEGF/AMH	518.182	-803.033	1839.398	0.392
VEGF/ Estrogen	6.222	-11.051	23.496	0.43
VEGF/Progestagen	0.436	-4.795	5.666	0.852
VEGF/ Beta inhibin	29.136	-49.060	107.332	0.415
Luteal body area	1.598	-16.497	19.692	0.844
Luteal body intens	0.072	-20.768	20.912	0.994
Internal theca intens	0.072	-20.768	20.912	0.994
Internal theca area	-10.138	-28.511	8.236	0.239
Interstic cell intens	-2.633	-16.146	10.879	0.665
Interstic cell area	3.371	-16.543	23.284	0.706
Total body luteal index	2.927	0.424	5.430	**0.027**
Total body luteal index VEGF	180.106	-208.114	568.326	0.316
Internal theca index	3.997	0.456	7.538	**0.031**
Internal theca index VEGF	179.952	-385.063	744.967	0.484
Total interstic cell index	2.834	0.593	5.075	**0.019**
Total interstic cell index VEGF	2.059	-1.686	5.804	0.24

Abbreviations: CI: confidence interval; FSH: follicle-stimulating hormone; AMH: Anti-Mullerian hormone; LH: luteinizing hormone; VEGF: Vascular Endothelial Growth Factor;.