

1 **Supplementary table 1:** Effect on ACTH values after rectal (n=11) and vaginal (n=12;
2 respectively n=3 for t_{50} , n=2 for t_{2ULN} and n=11 for $AUC_{0-240min}$) administration of 100 mg
3 prednisone versus subcutaneous (n=12) and intramuscular (n=12) administration of 100 mg
4 hydrocortisone; kinetic parameters.

	Mean (CV %)	CI 95 %	MIN	MAX	p
C_{BASELINE} (ng/l)					
vaginal	790 (54)	520 – 1060	34	1254	
rectal	767 (47)	527 – 1007	87	1250	
s.c.	946 (65)	553 – 1339	66	2068	
i.m.	724 (67)	415 – 1033	113	1991	0.700
C_{MIN} (ng/l)					
vaginal	531 (63)	317 - 745	21	908	
rectal	79 (78)	37 – 121	28	213	
s.c.	17 (51)	37 – 121	0	28	
i.m.	14 (64)	8.4 – 20	0	27	<0.001
Dunnett-T3: 1) rectal versus s.c.: p=0.041 ; 2) rectal versus i.m.: p=0.033 ; 3) s.c. versus i.m.: p=0.984; 4) vaginal versus rectal: p=0.004 ; 5) vaginal versus s.c.: p=0.001 ; 6) vaginal versus i.m.: p=0.001					
C_{BASELINE-MIN} (%)					
vaginal	37 (62)	23 - 52	5	81	
rectal	86 (15)	77 – 95	57	97	
s.c.	98 (1)	98 – 99	97	100	
i.m.	98 (1)	97 – 99	96	100	<0.001
Dunnett-T3: 1) rectal versus s.c.: p=0.056; 2) rectal versus i.m.: p=0.058; 3) s.c. versus i.m.: p=1.000; 4) vaginal versus rectal: p<0.001 ; 5) vaginal versus s.c.: p<0.001 ; 6) vaginal versus i.m.: p<0.001					
t₅₀ (min)					
vaginal	110 (102)	-170 - 390	45	240	
rectal	149 (31)	117 – 180	75	240	
s.c.	60 (26)	50 – 70	45	75	
i.m.	58 (27)	48 – 67	45	75	0.003

Dunnett-T3: 1) rectal versus s.c.: **p<0.001**; 2) rectal versus i.m.: **p<0.001**; 3) s.c. versus i.m.: p=0.999; 4) vaginal versus rectal: p=0.981; 5) vaginal versus s.c.: p=0.940; 6) vaginal versus i.m.: p=0.929

t_{2ULN} (min)

vaginal	125 (130)	-1336-1586	10	240	
rectal	193 (35)	137 – 249	45	240	
s.c.	132 (40)	99 – 166	10	180	
i.m.	116 (34)	92 – 141	45	180	0.222

AUC_{0-240min} (ng/l *min)

vaginal	162004 (63)	93767- 230241	6943	280155	
rectal	90419 (43)	64146 – 116693	13899	156720	
s.c.	56078 (62)	33895 – 78261	3826	122719	
i.m.	40993 (62)	24864 – 57121	10040	104757	0.001

Dunnett-T3: 1) rectal versus s.c.: p=0.198; 2) rectal versus i.m.: **p=0.014**; 3) s.c. versus i.m. 0.781; 4) vaginal versus rectal: p=0.233; 5) vaginal versus s.c.: **p=0.035**; 6) vaginal versus i.m.: **p=0.015**

5 **C_{BASELINE}**, baseline ACTH (mean of values at -10min and 0 min); **C_{MIN}**, minimal ACTH concentration
6 after administration of prednisone/hydrocortisone; **C_{BASELINE-MIN}**, difference between baseline and
7 minimal ACTH levels after administration of prednisone/hydrocortisone; **t₅₀**, time to 50 % decrease of
8 ACTH levels; **t_{2ULN}**, time to decrease of ACTH levels <92 ng/l (=upper limit of normal multiplied with
9 2); **AUC_{0-240min}**, area under the concentration-time curve (ACTH) from zero to last sampling time; **CV**,
10 coefficient of variation; **CI**, confidence interval; **MIN**, minimum; **MAX**, maximum; **s.c.** , subcutaneous;
11 **i.m.**, intramuscular. Analyses were performed by **ONEWAY ANOVA**. Post-HOC-Tests: Scheffé
12 procedure and Dunnett-T3.