

PROCEEDINGS OF THE JOINT MEETING BETWEEN THE SCANDINAVIAN AND BRITISH PHARMACOLOGICAL SOCIETIES

9TH-11TH JULY, 1968

COMMUNICATIONS

In communications with more than one author, an asterisk (*) denotes the one who presented the work.

Bioassay of long duration corticotrophin preparations on guinea-pigs

A. I. PEKKARINEN, *Department of Pharmacology, University of Turku, Finland*

Long duration corticotrophin preparations were standardized at intervals of 1 month on the same male guinea-pigs. The animals were premedicated with pentobarbitone (Abbott, 10 mg/kg orally), methadone (Leiras, 4 mg/kg intraperitoneally) and chlorpromazine (May and Baker, 5 mg/kg intraperitoneally).

The international working standard (Mill Hill, London) was diluted in long-acting depot media and used as the reference standard in 6- and 4-point assays. After dilution, the long-acting corticotrophin was injected into the thigh (0.033, 0.1 and 0.3 i.u./100 g. i.m.) and blood was sampled from the shoulder vein either 2 hours later, or in the case of carboxymethyl cellulose (CMC), 3 hours later. Plasma 17-hydroxycorticosteroids were determined fluorimetrically. In 6- and 4-point assays, the mean potencies of gelatine corticotrophin (Lääke Oy) were 103.2 and 102.2 i.u./mg respectively, and those of Ferring corticotrophin peptide in 1% polyphlorethin-phosphate (PFF) 125.4 to 138.0 and 143.9 to 134.6, and in 1% CMC, 152.8 to 167.8 and 145.3 to 153.6, respectively. Corticotrophin-Z (Organon) was dissolved before bioassay in sodium citrate/disodium EDTA, and in 6- and 4-point assays had potencies of 119.8 to 118.3, and 106.7 to 112.9 i.u./ampoule respectively. The mean indices of precision for the assays of the four types of corticotrophin were in order, 0.18, 0.14, 0.19 and 0.15. β_{1-24} corticotrophin-peptide (Ciba) in gelatine had mean potencies of 49.6 and 56.0 i.u./mg and β_{1-23} corticotrophin-23-amide (Hoechst) in PFF, potencies of 89.2 and 97.0 i.u./mg, in 6- and 4-point assays respectively. The potencies of the different corticotrophins when assayed in the absence of agents prolonging the activity were similar to those obtained when such agents were present, with the exception of β_{1-23} corticotrophin-23-amide where PFF increased the potency in comparison with that found using an unmodified aqueous injection medium. In addition, β_{1-28} and β_{1-32} corticotrophin peptides have been standardized in simple aqueous medium. The mean activity of human β_{1-32} corticotrophin-peptide was 61.0 and 47.4 i.u./mg and that of β_{1-28} corticotrophin-peptide was 19.5 and 16.6 i.u./mg when assayed in 4- and 6-point assays. This is clearly less than that of the IIIRD International Working Standard of corticotrophin (100 i.u./mg).