Endopeptidase Inhibition: A New Option to Influence Penile Smooth Muscle Tone? An In vitro Study

1Stefan Ückert, 1Pejman Shahin, 2Andreas Bannowsky, 1Markus A. Kuczyk

1Hannover Medical School, Division of Surgery,
Dept. of Urology & Urological Oncology, Hannover, Germany

2Imland Klinik GmbH, Dept. of Urology, Rendsburg, Germany

Burnett AL et al, Science 257: 401 - 403, 1992


Burnett AL et al, J Urol 150: 73 - 76, 1993

Mediators involved in the control of penile erectile tissue
(*Corpus cavernosum penis*)

**Flaccidity**
- Adrenaline
- Endothelin-1 (ET-1)
- Angiotensin
- Neuropeptide Y
- Vasopressin

**Erection**
- Nitric oxide (NO)
- Prostaglandine F2 (PGF)
- CNP
- Oxytocin (OT)
- VIP
Methods

Investigating (using the tissue bath technique) the effects of the endopeptidase inhibitor KC 12615 on the relaxation induced by CNP and VIP/contraction induced by Big Endothelin 1 (Big ET-1) of isolated human penile erectile tissue
Results I

(B): Effects of pre-exposure with KC 12615 (10 μM, for 10 min) on the contraction of isolated penile CC induced by Big ET-1

(C) Effects of KC 12615 (0.01 – 10 μM) on isolated human CC challenged by NE (1 μM)
Results II

(A) 100 nM CNP

(B) 100 nM VIP
Inhibition of endopeptidase activity can antagonize the contraction of human penile erectile tissue induced by physiological concentrations of Big ET-1

NEP/hSEP inhibition: a potential future concept to target ED in patients with generalized vascular endothelial dysfunktion (DM, vascular sclerosis)?