cross reactivity with blood-group A, B, H, Lewis and I substances was detected, while no M, N, S, s and P_1-like activity was found.

Table 1 summarizes the results of haemagglutination inhibition tests performed on the urinary glycoprotein at different stages of purification. It appears that the blood-group activity of the HUGI increases as the gastric antisecretory activity increases. This direct relationship between the two activities is better illustrated in the figure.

The following evidence indicates that blood-group activities are an intrinsic property of HUGI: a) the HUGI appears to be homogeneous by several criteria (C and N-terminal amino acid, ultracentrifugation, sodium dodecyl sulphate polyacrylamide electrophoresis and gel filtration, etc.)[2]; b) the blood-group activity of the purified HUGI is marked (table 1); c) the increase of all the group specific activities found strictly parallels the increase of the gastric antisecretory activity during the various steps of purification. It seems very improbable that the blood-group activities are due to spurious materials. These contaminations should behave in the same way as HUGI, throughout the purification procedure.

Further, when other urinary glycoproteins, as for instance the Tamm-Horsfall glycoprotein which is present in 20–40 mg/l amount, were examined, no blood-group-like activity was detected after the mere precipitation with 0.58 M sodium chloride. The presence of A, B and H blood-group specificity in the same glycoprotein preparation is explained by the fact that the HUGI was obtained from pooled urines of individuals of different blood-group.

When HUGI was purified from urine of a single secretor individual, the activity corresponding to the ABO blood-group of the subject examined was detected. In this case too, a strict parallelism between the increase of antisecretory activity and blood-group activity during the purification was found. These results are reported in table 2.

When HUGI was purified from urines of non-secretor subjects, a strong gastric antisecretory activity was detected in the absence of blood-group specific activity. This observation suggests that the Secretor gene (Se gene) is involved in synthesis of a part of the HUGI molecule. However, neither the presence or the absence of various blood group determinants influences the biological activity of the molecule. The fact that HUGI, which is a compound with a possible pharmacological interest, possesses blood-group specific activities is an occurrence to be considered to avoid anaphylactogenic implications. Together with intestinal disaccaridase[8] and human chorionic gonadotrophin which however displays A activity alone[9], HUGI is the only example of blood-group antigenicity associated with a functioning glycoprotein molecule.

Table 2. A- and B-like blood group activity of HUGI from 2 secretor and 2 non-secretor subjects, respectively

Subjects		Blood group activity (ED_{100} in µg) A	B
Secretors	blood group A	12	absent
	blood group B	absent	17
Non-secretors	blood group A	absent	absent
	blood group B	absent	absent

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Relation between fibrinolytic activity and prostacyclin generation of atherosclerotic artery and dacron prosthetic graft

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Summary. The newly formed tissue of dacron vascular prosthetic grafts implanted in humans demonstrates prostacyclin generation and fibrinolytic activity comparable to that of the atherosclerotic artery in the vicinity. This provides some evidence that both activities important for haemostasis run parallel.

Quantitative studies of fibrinolytic activity of the normal vascular wall[1] and atherosclerotic tissue[2–5] discovered an important self-regulation mechanism of endothelium in haemostasis, which is changed considerably under different metabolic conditions[6]. Since Moncada's group[7,8] first described a new metabolite of arachidonic acid metabolism, prostacyclin (PG I_2), the most potent known endogenous inhibitor of platelet aggregation, which prevents platelet thrombus formation in vivo, the question arose, whether there is a relation between fibrinolytic activity and prostacyclin formation in vascular prosthetic grafts and the arteries in the vicinity. Recently D'Angelo and coworkers[9] demonstrated a comparable diminution of prostacyclin generation and fibrinolytic activity over an atherosclerotic plaque.

Material and methods. The vascular tissue was obtained from the iliac arteries of 8 male human (age: 45–77 years) in the vicinity of dacron vascular grafts, which were removed after being implanted for 6 up to 56 weeks. The fibrinolytic activity was estimated using Todd's fibrinolysis autography technique[10,11] (incubation time 60 min) and the quantitative evaluation described by Fischer[12] (endothelial

lysis area in mm^2/tissue section). Prostacyclin formation was examined according Moncada[13], as described earlier by us[14,15] in ng/mg/min PG I_2 by quantification of the platelet aggregation inhibiting effect. The reference substance of PG I_2 was kindly supplied by Dr John E. Pike, Upjohn Company, Kalamazoo, Michigan, USA).

Results. Our results from 16 human controls clearly indicate that the fibrinolytic activity between the normal and atherosclerotic vessel wall is different over the endothelial surface. Similar results can be obtained for prostacyclin formation by human aorta. The prostacyclin generation of implanted Dacron prosthetic grafts (0.0055 ± 0.00125 ng/mg/min PG I_2) is comparable with the values of the atherosclerotic artery (0.0070 ± 0.00125 ng/mg/min PG I_2) in the vicinity. The fibrinolytic activity expressed in mm^2 endothelial lysis area per tissue section between the vascular tissue (1.59 ± 0.37 mm^2) and the implanted grafts (1.29 ± 0.46 mm^2) is also not significantly different (the results are quantitatively summarized in the table).

Discussion. The values obtained demonstrate that the fibrinolytic activity and prostacyclin formation potency in the newly formed tissue of a vascular prosthetic graft in general are running parallel. Similar results of a different fibrinolytic activity of normal and atherosclerotic vessel wall[9,11,12] can be found for prostacyclin formation in human[16,17] and experimental animals[18,19] aorta also. The fibrinolytic activity and prostacyclin formation of dacron grafts and arteries is comparable, which means that the newly formed endothelial layer built up by cells derived from the blood stream[22], and grown per continuitatem[23], exhibits similar metabolic properties for haemostasis as the endothelium in the neighbourhood[24]. The data confirm the results obtained by the group of de Gaetano[9] who first reported a relation between fibrinolytic activity and PG I_2 formation. The haemostatic properties of dacron grafts cannot explain the high frequency of parietal thrombus formation leading to graft occlusion.

Tissue	Endothelial lysis area (mm^2/tissue section)	PG I_2 generation (ng/mg wet wt/min)
Artery	1.59 ± 0.37	0.0070 ± 0.00125
Dacron	1.29 ± 0.46	0.0055 ± 0.00125

$\bar{x} \pm SE$.

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Maternal behavior in two rat lines selected for differences in the acquisition of two-way avoidance[1]

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Summary. The maternal behavior of Roman high- and low-avoidance (RHA/Verh and RLA/Verh) rats was studied, using a time-sampling method. It was concluded that: a) RLA/Verh mothers spent more time with their young, b) RHA/Verh mothers were more active, and c) the mothers of both lines mostly 'blanketed' their young during nursing, although the RHA/Verh mothers assumed the side-nursing position more often than their counterparts.

Originally developed by Bignami in Rome[2], the Roman high- and low-avoidance rats selected and bred at our institute (RHA/Verh and RLA/Verh), in addition to extreme differences in the acquisition of 2-way avoidance in a shuttle box[3], also differ in other behavioral tests such as exploratory activity and locomotion patterns[4], Hebb-test performance and open-field defecation[5]. These results may be partly due to emotional differences and perceived stress-levels between these selected lines[3]. Since certain connections have already been established between emotionality and activity/avoidance[5,6], and between emotionality and maternal behavior[7,8], it was decided to also study the maternal behavior patterns of RHA/Verh and RLA/Verh rats, in order further to investigate these connections. Wishing to observe the litters in an undisturbed condition, we have developed and made use of a time-sampling method for these types of experiments which avoids, as much as possible, manipulation of the rats and other interventions.

Methods. 55 RHA/Verh and 51 RLA/Verh litters were observed during the first 14 days of life and, from these, 29 RHA/Verh and 26 RLA/Verh litters were observed for an additional 7 days until weaning. This was the first mating for the female rats used, all of which were about 120 days