Prostacyclin (PGI₂) is the most potent endo-
genous inhibitor of platelet aggregation.
Prostacyclin increases platelet cyclic AMP con-
centration by activating a receptor on the
platelet cell membrane. The characteristics
of this receptor have been studied in fractured
human platelets from normal subjects by measur-
ing specific binding of tritiated prostacyclin
(Blair, Hensby & MacDermot, 1981, Journal of
Labelled Compounds and Radiopharmaceuticals, 18,
361-370). Two binding sites were identified
by Scatchard analysis, one of high affinity and
one of low affinity. Measured at equilibrium,
the dissociation constant of the high affinity
site was 12 nM which is similar to that des-
cribed in whole human platelets (Siegl, Smith,
Silver, Nicolsou & Ahern, 1979, Journal of
Clinical Investigation, 63, 215-220). There
was a mean of 2.4 x 10⁵ high affinity receptors
per platelet. Time course experiments defined
the rate constant for the forward reaction k⁺ as
3 x 10⁻⁵ M⁻¹ sec⁻¹ and the rate constant for
the dissociation of the ligand receptor complex
k⁻ as 2.9 x 10⁻³ sec⁻¹. The true dissociation
constant k⁺/k⁻ was 9.6 nM. Prostaglandin E₁
(PGE₁) and PGI₂ apparently compete for the same
high affinity receptor but the affinity for PGI₂
is 40 times greater than that for PGE₁. If
PGI₂ is a circulating hormone then compensatory
up-regulation of platelet prostacyclin receptors
might be associated with conditions where
deficiency of vascular prostacyclin production
has been proposed, such as diabetes (Dollery,
Friedman, Aensby, Kohner, Lewis, Porta
Ahern, 1979, Journal of
Clinical Pharmacology, 11, 85). We have further
examined the ANA patterns in
progressive systemic sclerosis (PSS). Centromere ANA
were
recently described and associated with the CREST
variant of PSS (Douvas A S et al, 1979, J.Biol.Chem.
254, 10514). Speckled nucleolar staining was
recognized. Six were nuclear patterns (centro-
mere, fine speckles, coarse speckles, diffusely
grainy, homogenous and nuclear dots), and
three patterns were nucleolar (speckled, homo-
genous and clumpy). We have confirmed that
anti-centromere is highly selective for the
CREST syndrome. The diffusely grainy pattern
was associated only with precipitating antibody
to the 70,000 molecular weight protein antigen
Sci-70 (Douvas A S et al, 1979, J.Biol.Chem.
254, 10514). Speckled nucleolar staining was
associated with an increased frequency of
scleroderma renal disease (relative risk 13.1):