The issue of biosynthesis of CGs by mammalian cells has implications for the therapeutic use of digoxin and digitalis preparations. Worldwide, digitalis remains among the most frequently prescribed agents for the treatment of heart failure and atrial arrhythmias. In the heart failure setting, CGs augment cardiovascular contractility as well as neural reflex control of the circulation and renin secretion. However, the therapeutic usefulness of digoxin is controversial: some patients benefit from the drug, whereas others have adverse reactions. We have suggested that digoxin should not be given to patients in whom the ambient concentrations of endogenous CGs are increased (15). This highlights a need for the development of analytical methods that use clinically relevant volumes of blood for the routine determination of endogenous CGs so that the appropriate information concerning optimal therapy can be obtained (12).

In summary, Qazzaz et al. (2) provide important evidence of biosynthesis of digoxin-immunoreactive steroids.
in mammalian cells. Much challenging critical work, including the identification of the three key enzymes alluded to above as well as the major intermediates and end products, remains to be accomplished. Nevertheless, the results reawaken interest in the remarkable nature of mammalian adrenocortical metabolism as the source of a new class of metabolically active steroid hormones.

References

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