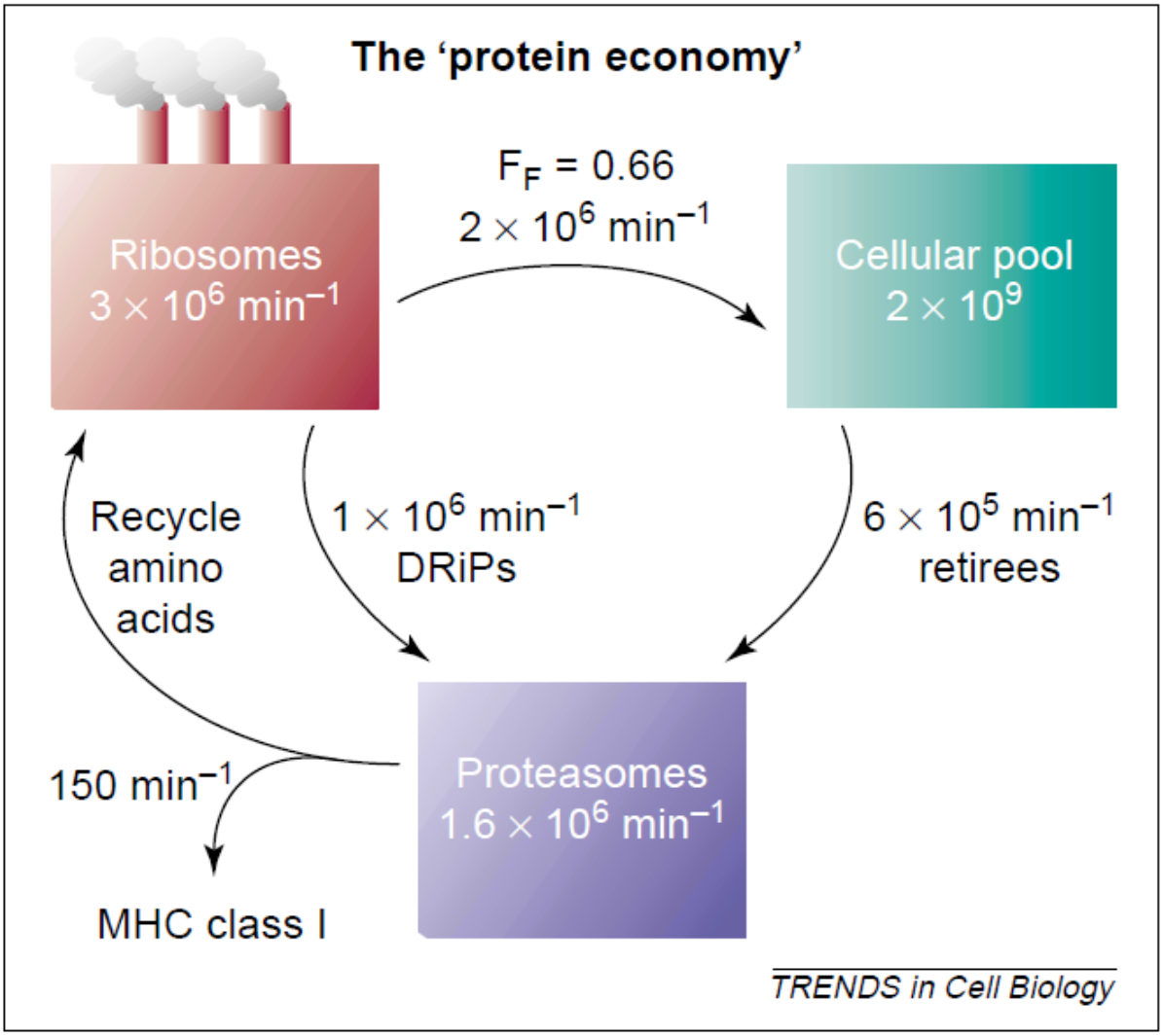

Fig. 1. The protein economy: estimates of rates of protein synthesis, folding and degradation in cells. Newly synthesized proteins are triaged from ribosome 'factories' into the cellular protein pool if they are functional or diverted to proteasomes for destruction, presumably due to defects in folding, intracellular location or in finding a suitable partner. Proteins in the cellular pool are diverted to proteasomes for similar reasons, but with a much longer half-life on average. Proteasome-generated peptides are degraded further in the cytosol into amino acids that are recycled into proteins. Only the lucky peptide manages to bind stably to a major histocompatibility complex (MHC) class I molecule, where after transport from the endoplasmic reticulum to the cell surface it can inform immune cells ($CD8^+$ T cells) of its presence. Abbreviations: F_F, functional fraction; DRiPs, defective ribosomal products.