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Hauer et al.

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- [54] **PHARMACEUTICAL COMPOSITIONS COMPRISING CYCLOSPORINS**
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Related U.S. Application Data

- [63] Continuation of Ser. No. 680,211, Apr. 4, 1991, abandoned, which is a continuation of Ser. No. 406,656, Sep. 13, 1989, abandoned.

[30] Foreign Application Priority Data

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|---------------|------|----------------|---------|
| Sep. 16, 1988 | [GB] | United Kingdom | 8821754 |
| Feb. 9, 1989 | [GB] | United Kingdom | 8902900 |
| Feb. 9, 1989 | [GB] | United Kingdom | 8902903 |
- [51] **Int. Cl.⁵** A61K 9/66; A61K 9/107; A61K 37/02; C07K 7/64
- [52] **U.S. Cl.** 424/455; 424/456; 424/457; 424/489; 514/11; 514/885; 514/937; 514/938; 514/963; 514/964; 514/970; 514/974; 514/975; 530/321
- [58] **Field of Search** 424/455, 456, 457, 489; 514/9, 11, 885, 937, 938, 970, 963, 964, 974, 975; 530/317, 321, 322

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[57] ABSTRACT

Pharmaceutical compositions comprising a cyclosporin, e.g. Cyclosporin or [Nva]²-Cyclosporin, in "microemulsion pre-concentrate" and microemulsion form. The compositions typically comprise (1.1) a C₁₋₅alkyl or tetrahydrofurfuryl di- or partial-ether of a low molecular weight mono- or poly-oxy-alkane diol, e.g. Transcutol or Glycofurol, as hydrophilic component. Compositions are also provided comprising a cyclosporin and (1.1) and, suitably, also a saccharide monoester, e.g. raffinose or saccharose monolaurate. Dosage forms include topical formulations and, in particular, oral dosage forms.

26 Claims, 4 Drawing Sheets

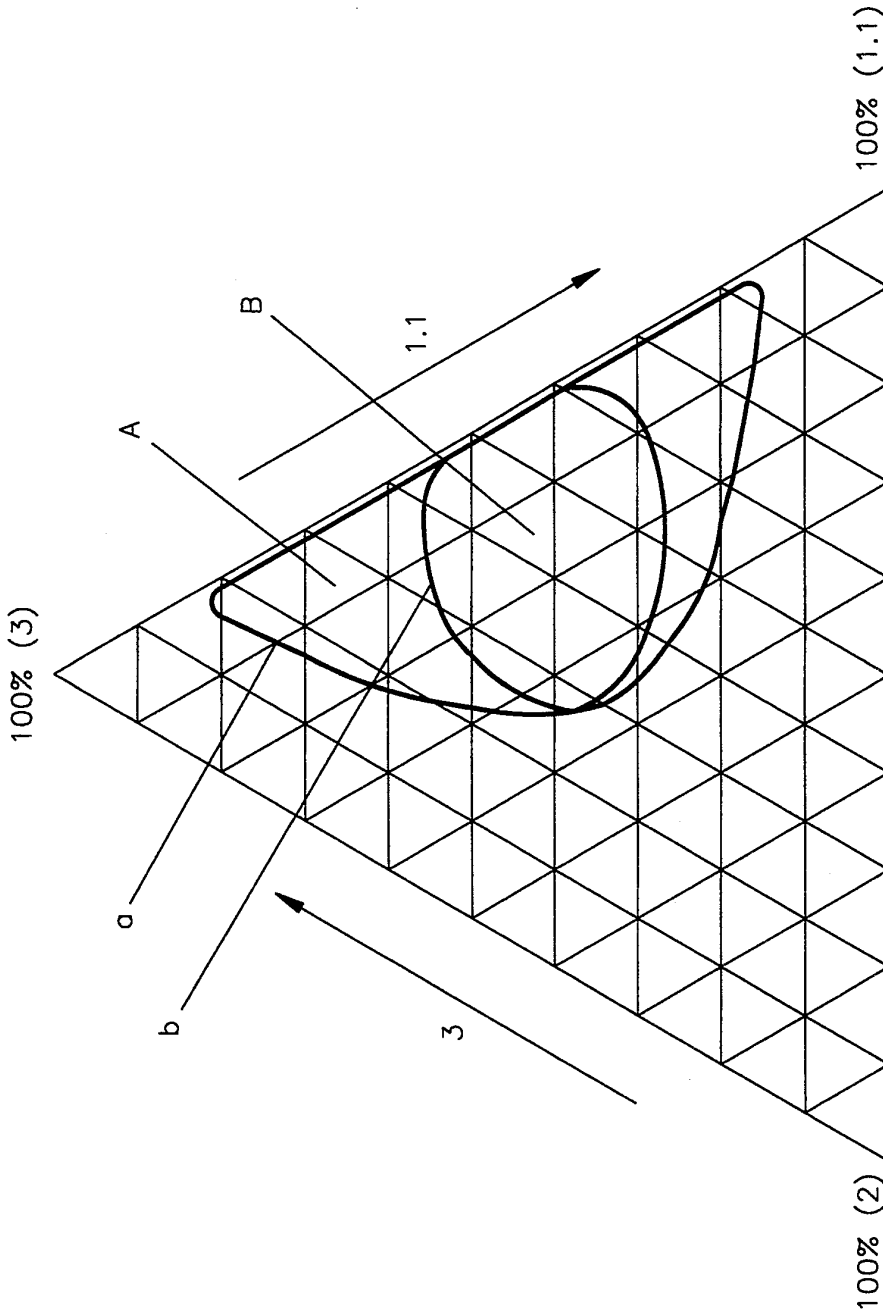


FIG. 1

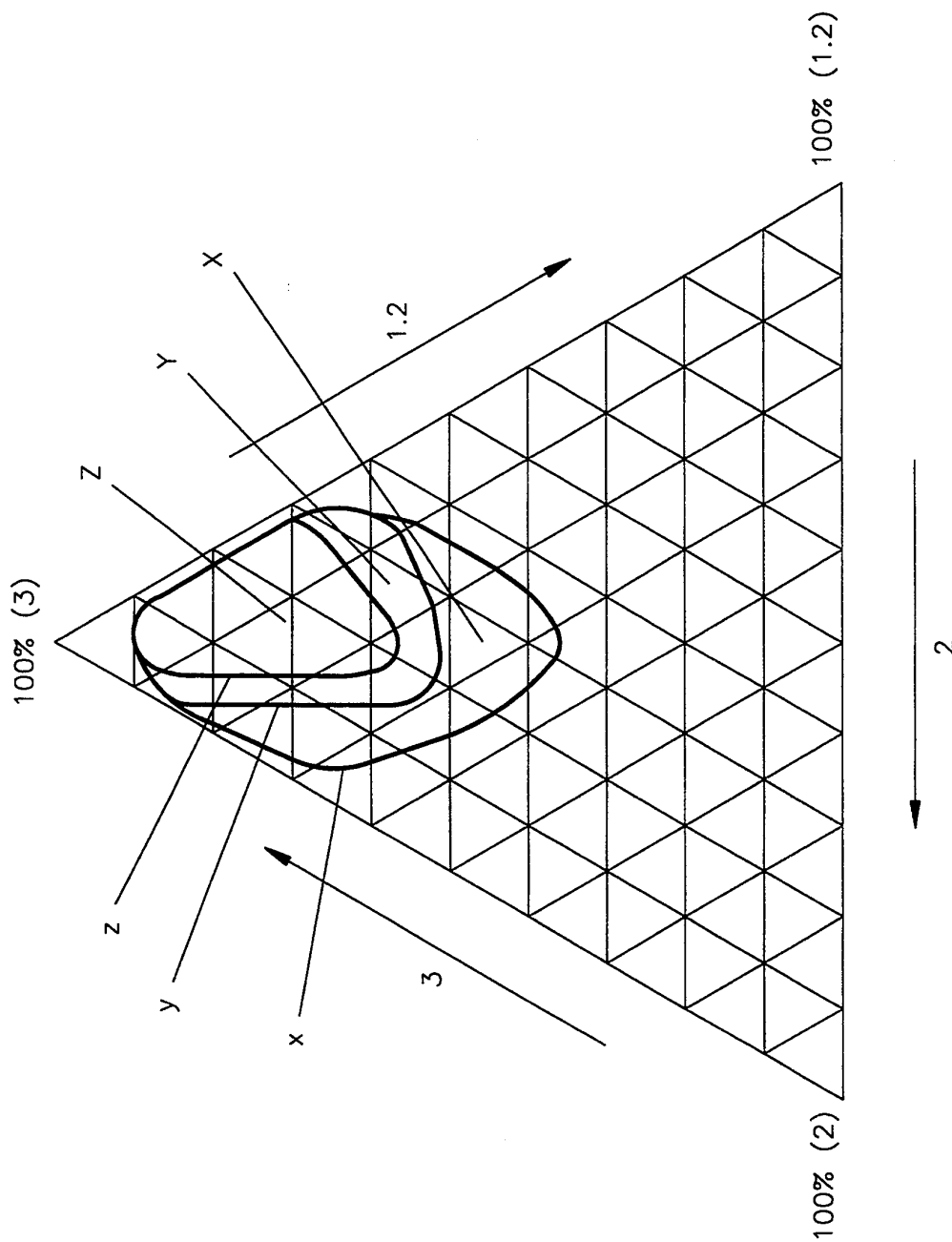


FIG. 2

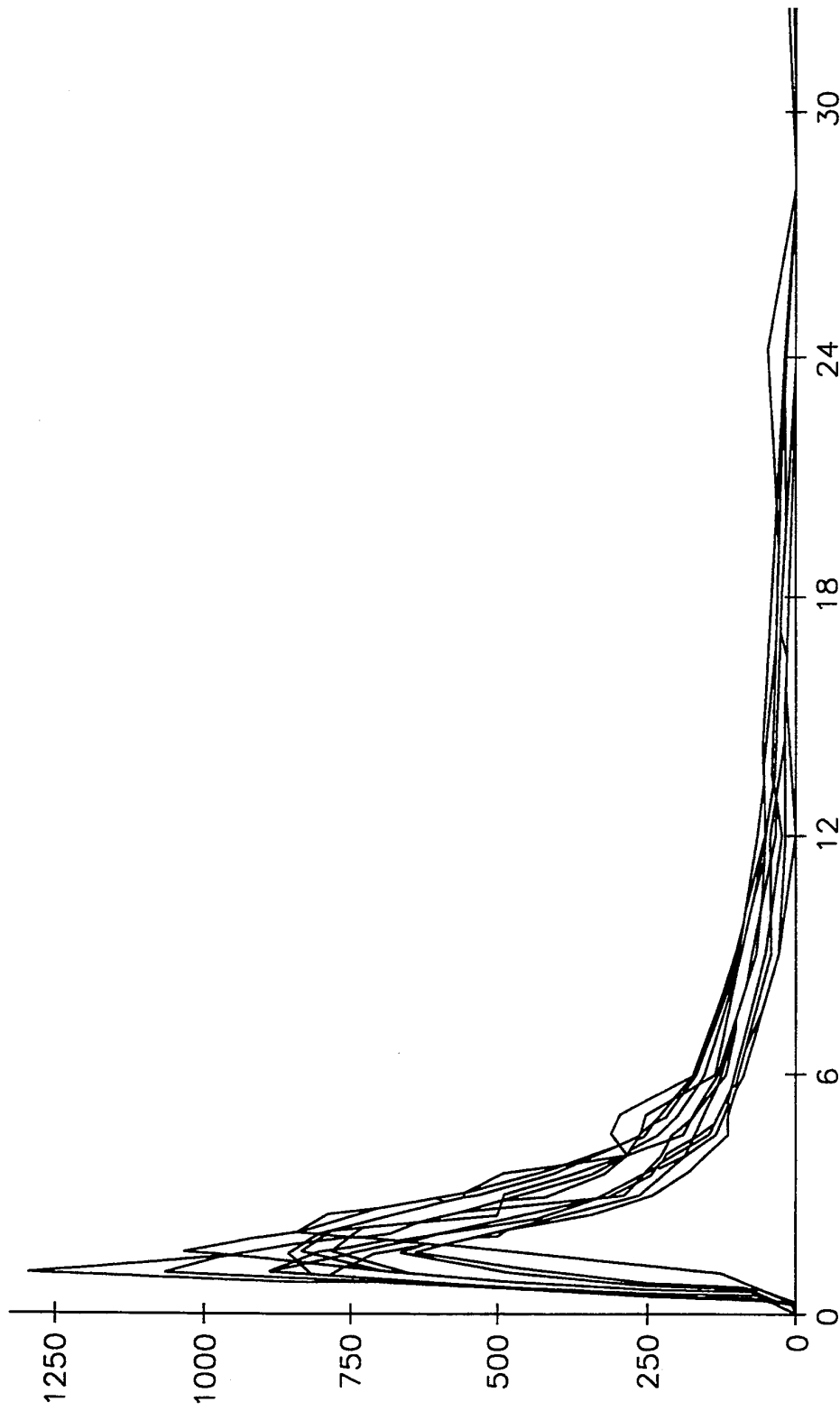


FIG. 3

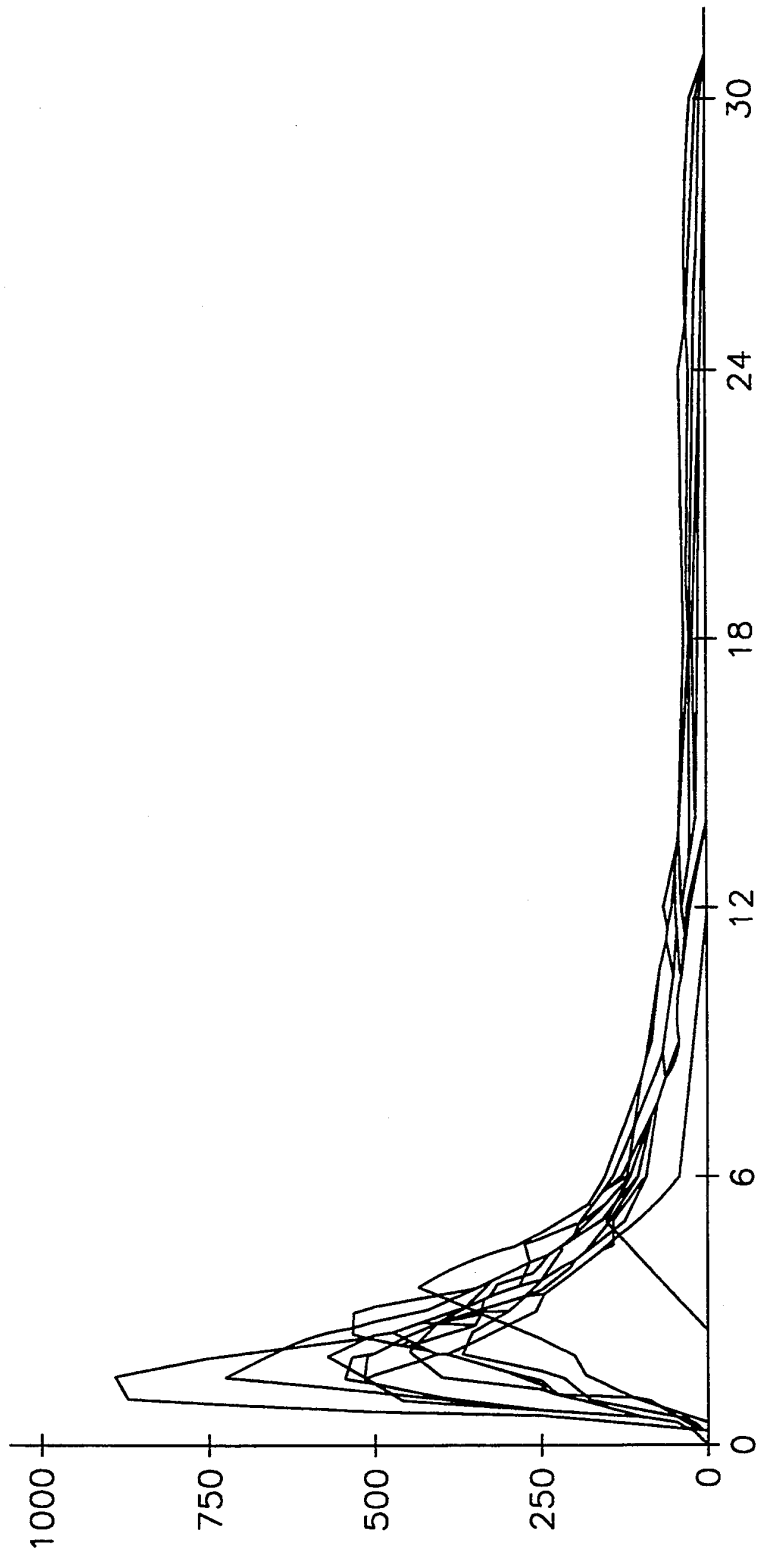


FIG. 4

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