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ABSTRACT

The aim of the investigation was to describe the partitioning of both of nonionic surfactant systems (Tween 80 and Span 20) between componenets of Rosemary oil, decanol, pentanol and distilled water to form phase diagram of nonionic microemulsion system. Based on the Gas Chromatograph Mass Spectrum (GCMS) analysis, the major composition of Rosemary Oil included 1,8-cineol, beta-terpine, 1-camphor and other were determined in this study. Beside that the microemulsion with Rosemary oil and their mixtures stabilized by Tween 80 and Span 20 also were determined.

The investigation of the isotropic solution were found to be dependent on the weight ratio of the mixed Rosemary oil:decanol (50:50) and Rosemary oil:pentanol (50:50). The presence of decanol and pentanol extended the region of microemulsion conquered with only Rosemary oil. Systems with short chain of pentanol showing the largest region of microemulsion system. With comparison of surfactant, it was also observed that by using Tween 80 region of microemulsion was larger than.

ABSTRAK

Tujuan kajian ini adalah untuk menggambarkan pembahagian bagi kedua-dua sistem sufaktan tak ionik (Tween 80 dan Span 20) di antara komponen-komponen minyak pati Rosemary, dekanol, pentanol dan air suling membentuk gambarajah fasa bagi sistem mikroemulsi tak ionik. Berdasarkan analisis Gas kromatografi Jisim Spektrum, komposisi minyak pati Rosemary seperti 1,8-cineol, beta terpine, 1-champor dan lain-lain lagi ditentukan dalam kajian ini. Di samping itu kawasan mikroemulsi dengan minyak pati dan campurannya distabilkan oleh Tween 80 dan Span 20 juga ditentukan.

Kajian menunjukkan sesuatu larutan isitropik didapati bergantung kepada berat nisbah campuran minyak pati Rosemary:dekanol (50:50) dan minyak pati Rosemary:pentanol (50:50). Kehadiran dekanol dan pentanol meliputi sebahagian besar kawasan berbanding hanya dengan minyak pati Rosemary. Sistem dengan rantai pendek pentanol menunjukkan kawasan terbesar bagi kawasan mikroemulsi. Melalui perbandingan sistem surfaktan, didapati dengan menggunakan Tween 80 sistem mikroemulsi menjadi lebih besar.