

## Dihydropyrimidine Dehydrogenase Activity in a Korean Subjects

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Dihydropyrimidine dehydrogenase(DPD), a major enzyme in the metabolism of 5-fluorouracil(5-FU), demonstrates a wide interindividual variability(7 to 10-fold) in the population. And the activity of DPD is correlated with 5-FU pharmacokinetics. Furthermore patients with low or absent DPD activity are characterized by a decreased elimination of 5-FU from plasma associated with severe hematological, gastrointestinal and neurological toxicity. We evaluated the characteristics of the variability in peripheral blood mononuclear cell(PBMC) DPD activity in a 79 healthy Korean subjects. To minimize circadian variation in DPD activity, all blood samples were collected between 08.00 and 10.00h and the activity was assayed for 5-FU catabolites using a reported high performance liquid chromatography method. With freshly prepared samples, PBMC DPD activities in 79 volunteers were shown to follow a normal or Gaussian distribution. Further cross-analysis revealed that there was no significant difference among groups by sex, age or smoking. With frozen samples, the activities were also shown to follow a normal distribution with no differences in sex, age, or smoking. The mean value of DPD activity, assayed 14 days post sample collection, was 134 units  $\text{mg}^{-1}$  protein(range 30.4-256 units  $\text{mg}^{-1}$  protein). These findings indicated that the activity of DPD of this study subjects was lower than the reports from French and American Caucasians.