

S05-1 DRUG RE-PROFILING RESEARCH

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Although the approach of drug re-profiling is not so familiar in Japan as in USA, Japanese government, academia group and pharmaceutical industries have great interest in this field, therefore, it is necessary to develop consortium (government, academia and industry) to progress the drug re-profiling in Japan. Especially, the consortium should focus on the regulation (such as drug price) and liaison to scientific meetings, such as drug delivery system. In this talk, I would like to give speech to summarize these activities. I have been working on drug re-profiling study about non-steroidal anti-inflammatory drugs (NSAIDs) and geranylgeranylacetone (GGA), a leading anti-ulcer drug on Japanese market. For NSAIDs, we showed that both COX inhibition at gastric mucosa and membrane permeabilization activity of NSAIDs are required for the production of gastric lesions and we developed NSAIDs that do not exhibit membrane permeabilization activity as safer NSAIDs for the gastrointestinal tract. For GGA, we found that GGA has heat shock protein (HSP)-inducing activity. Since HSPs have cytoprotective and anti-inflammatory effects, GGA was predicted to be therapeutically effective against IBD and lesions of the small intestine. In fact, we showed these effects of GGA experimentally and clinically. Based on these results, we concluded that analysis of clinically using drugs would provide useful information about molecular mechanism of their actions and drug re-profiling studies.