Carcinogenic monitoring data on rasH2 mice to guarantee a long-term biologic stability

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Abstract

Laboratory mice, which are used for the regulatory purposes such as carcinogenicity tests, require long-term biological stability during the mass production and over successive generations. CB6F1-Tg(rasH2) mice have been known for having a high susceptibility to human carcinomas and mainly used for the short-term carcinogenicity test for pharmaceuticals. RasH2 mice are now produced by two major breeding facilities, Taconic (Germantown, NY, USA) and CLEA Japan (Fukuoka, Shizuoka, Japan). In order to guarantee the biological equivalence and stability of the phenotype of rasH2 mice, main carcinogenic susceptibility produced by both facilities, we have periodically compared the carcinogenic response of these mice to the standard positive control compound (N-ethylnitrosourea) (ENU).

Materials & Methods

Throughout the study, we present the results of full-volume monitoring performed in 2013 and compared with the results obtained in 2006.

Results

In the present study, we examined the body weight gain of rasH2 mice produced by Taconic and CLEA Japan (Figure 2). The group of male mice produced by Taconic was heavier than that of vehicle treated mice for both sexes (Figure 2).

Discussion and Conclusion

Although rasH2 mice produced by Taconic were slightly smaller than mice produced by CLEA Japan (Figure 2), the group of male mice produced by Taconic was heavier than that of vehicle treated mice for both sexes (Figure 2).

Figure 1. Standard schedule of the phenotypic monitoring in rasH2 mice

Full-volume monitoring. Histopathological study of the whole organ is performed at the time when the breeding colonies are replaced. Simple monitoring (Histopathological study of the forestomach only) is performed in the other years until the renewal of breeding colonies.

Figure 2. Body weight gain of rasH2 mice produced by Taconic and CLEA Japan

Figure 3. Survival rate of rasH2 mice produced by Taconic and CLEA Japan

Table 1. Incidence of neoplasm after MNU administration in full-volume monitoring performed in 2006 and 2013

<table>
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<tr>
<th>Treatment</th>
<th>Year</th>
<th>Study site/Breeder</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
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<td>CLEA Cont.</td>
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<tr>
<td></td>
<td>2013</td>
<td>Tac. Cont.</td>
<td>0</td>
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References