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ENZYME ACTIVITIES OF THE STRAINS BELONGING TO FAMILY
LEPTOSPIRACEAE DETECTED BY THE API ZYM SYSTEM,
AND SELECTION OF ANTIGENIC VARIANTS FROM
LEPTOSPIRA INTERROGANS SEROVAR *CANICOLA* BY MEANS
OF ANTI-*CANICOLA* MONOCLONAL ANTIBODY

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1) A total of 32 strains of family *Leptospiraceae* (23 strains of *Leptospira interrogans*, 6 strains of *Leptospira biflexa*, 2 strains of *Leptonema* and 1 strain of *Leptospira parva*) were examined for enzyme activities using 89 substrates (API ZYM system). More than 90% of the strains belonging to family *Leptospiraceae* possessed strong activities of β -D-galactosidase, β -D-glucosidase and 5 esterases. More than 90% of the strains belonging to genus *Leptospira*, except *L. parva*, had strong activities of L-lysine arylamidase and α -L-glutamate arylamidase. *L. biflexa* strains, except serovar *andamana*, were different from the other strains examined in that they possessed glycyl-glycine arylamidase, glycyl-phenylalanine arylamidase and L-tryptophane arylamidase. *L. biflexa* strains, except *andamana*, *L. parva* and *Leptonema* strains, possessed strong activities of glycine arylamidase and leucyl-glycine arylamidase. Two strains of genus *Leptonema* were different from the strains belonging to genus *Leptospira* in that they possessed strong activities of β -D-lactosidase. *L. parva* lacked α -D-galactosidase, which other strains belonging to family *Leptospiraceae* possessed. Dendrogram analysis revealed that the strains belonging to family *Leptospiraceae* were divided into 4 groups. The first group consisted of all strains belonging to *L. interrogans* and serovar *andamana* of *L. biflexa*; the second group consisted of the remaining 5 serovars of *L. biflexa*; the third group consisted of genus *Leptonema*; and the fourth group consisted of only *L. parva*.

2) Antigenic variants were isolated from *canicola* by a single selection with anti-*canicola* monoclonal antibody CT-3. The variants were not identical to any serovars of serogroup *Canicola* and were thought to be a new serovar. Variation frequency was calculated at 5.9×10^{-4} . Usefulness of monoclonal antibodies for selection of antigenic variants of leptospiras was discussed.