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"Ricerca e Applicazione di Metodologie ecotossicologiche"

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La ricerca, il controllo da parte delle Agenzie, il mondo dei privati

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RACCOLTA ABSTRACTS

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ECOTOXICITY OF KETOPROFEN AND THE S(+)-ENANTIOMER (DEXKETOPROFEN): BIOASSAYS IN FRESHWATER MODEL SPECIES AND RESPONSES OF FISH PLHC-1 CELL-LINE

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Abstract -. The ecotoxicological properties of ketoprofen (KP) or its enantiomer (dexketoprofen: DKP) in different experimental models were evaluated. Firstly, by acute and chronic toxicity tests using three representative model organisms (*Vibrio fischeri*, *Pseudokirchneriella subcapitata* and *Ceriodaphnia dubia*). Secondly, by evaluating the responses of biotransformation systems and multidrug resistance associated proteins (MRP1/MRP2) using the PLHC-1 fish hepatic cell-line. Data from both acute and chronic exposure of model organisms showed that DKP produced an higher toxicity (inhibition of bioluminescence and algal growth and crustacean mortality/immobilization), compared to KP; however effects were detectable only at high concentrations. The growth inhibition test with *P. subcapitata* showed that KP and DKP exhibited different values for the no observable effect concentration (NOEC) and lowest observable effect concentration (LOEC). Further, KP and DKP did not exert cytotoxic effects in PLHC-1 cells, showing compound-, time- and dose-dependent differential effects on phase I and II biotransformation systems. For CYP1A, cell exposure to KP and DKP differed at transcript and activity levels. Exposure to KP and DKP modulated MRP1 and MRP2 mRNA levels and these effects were also compound-, time- and dose-dependent. Overall, the present study revealed the interactions between these compounds and key detoxification systems, and different sensitivity to the racemic KP mixture compared to its S(+) enantiomer (DKP).