

### **33<sup>rd</sup> Internal REPORT TO MACLAB: More on Lyprinol**

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This report consists of 2 pages and 1 table (No. 73).

#### ***Summary***

A pilot study to assess the duration of Lyprinol's efficacy, indicated Lyprinol was effective for at least 3 days after ceasing dosing. Naproxen and Celebrex were not.

#### ***Background***

Nearly all the previous assessments of mussel lipid preparations have been conducted in rats with pre-established arthritis, beginning treatment when the first signs of paw inflammation were evident (usually day 10 after giving the arthritigen). This gives the best opportunity to assess anti-inflammatory (AI) activity when comparing drugs and test compounds, which may have different mechanisms of action, against chronic (i.e. non-transient) disease. However, it does not distinguish different types of AI drugs which may act primarily upon different stages of disease development or expression – with differing durations of action.

Here we began treating the rats on day 7 for four days only i.e. ceasing dosing on day 10.

#### ***Results (Table 73)***

The severity of arthritis was scored on day 13: it would normally be on day 14 but we had a 'galloping' disease this time (not very common but it does happen) and we were required to terminate the controls = untreated animals at this earlier time. Table 73 indicates that Naproxen (an OTC Cox-1 inhibitor) and Celebrex were virtually ineffective, given on this early pre-arthritic dosing schedule, in preventing subsequent expression of arthritis.

However Lyprinol did have a significant effect in reducing the severity of the subsequent arthritis (reducing the arthritis score >50%).

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**TABLE 73: COMPARING LYPRINOL WITH NAPROXEN & CELEBREX ON AN EARLY DOSAGE REGIMEN FOR RATS DEVELOPING POLYARTHRITIS**

Treatment given on Days 7 → 10 polyarthritis measured on Day 13.

TREATMENT	Mg/kg	Rear paw Swelling	Front paw inflamm.	▲Wt (days 7→13)	Arthr. Score	% Inhibition of:		Arthr. Score
						Rear ↑	Front ↑	
None	-	1.59mm	4.1+	+04gm	3.5+	-	-	-
Lyprinol	16	0.28	2.5+	+10	1.5+	84	39	57
Naproxen	25	1.60	3+	+11	3+	(-01)	27	14
Celebrex	15	1.39	4.3+	+16	2.8+	13	(-05)	20
N = 4 rats/gp								(E.749)

Conclusions: (i) Lyprinol has an enduring effect in retarding arthritis development.  
(ii) 2 NSAIDs did not.

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**Comment:**

This result is certainly interesting but must be confirmed – perhaps comparing Lyprinol next time to Vioxx and Diclofenac (Voltaren), which are also big selling COX-2 and Cox-1 inhibitors respectively. After this repeat experiment (including a dose-response study for Lyprinol) with early dosing i.e. Days 7-10 only, it should be possible to write a short article for publication in a mainline pharmacology journal (other than Inflammopharmacology), with guaranteed wider readership.

Test is on email and hardcopy in the mail.

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