

lines (KB and L1210). The water solubility diminished the cytotoxicity probably because of low lipophilicity to cross the cell membrane. Interestingly, two analogues **401** and **411** have shown significant inhibition of the proliferation of L1210 in the G1 phase, whereas squamocin was not specific.

Scheme 28. Semisynthesis of glycosyl analogues of squamocin by Figadère's group.

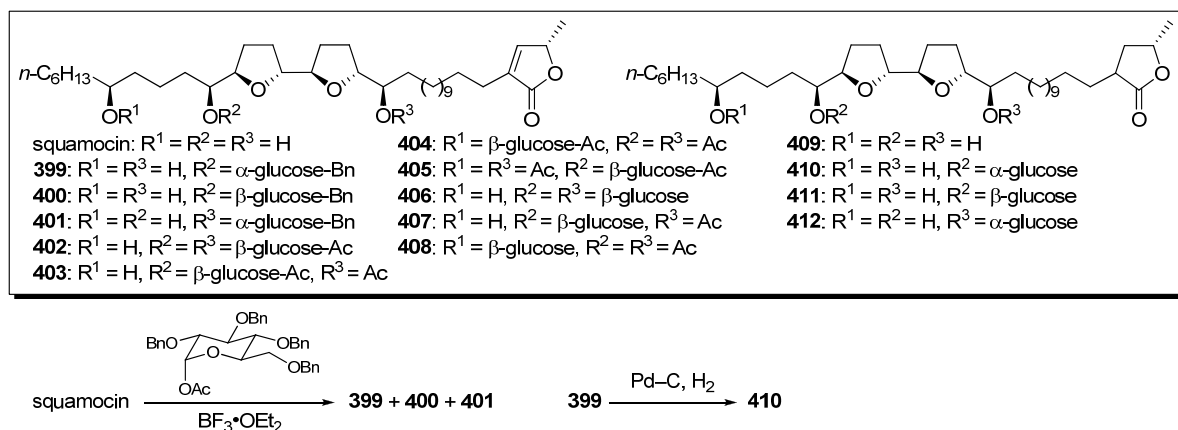


Table 30. Cytotoxic activity of glycosyl analogues of squamocin by Figadère's group.

Compounds	EC ₅₀ (μM)			Compounds	EC ₅₀ (μM)		
	KB ^a	VERO ^b	L1210 ^c		KB ^a	VERO ^b	L1210 ^c
squamocin	1.6×10^{-5}	1.6×10^{-2}	$< 4.0 \times 10^{-4}$	408	1.1×10^{-2}	3.4×10^{-1}	1.7×10^{-2}
399	4.3×10^{-1}	8.7×10^{-1}	nt	409	2.4×10^{-4}	1.6×10^{-2}	$< 2.5 \times 10^{-4}$
400	nt	nt	5.0×10^{-2}	410	1.9×10^{-3}	6.0×10^{-1}	1.0×10^{-2}
404	9.6×10^{-4}	2.0×10^{-2}	3.0×10^{-1}	411	nt	nt	8.0×10^{-2}
406	1.05	1.05	10	vinblastine	1.2×10^{-3}	< 3.7	nt
407	3.6×10^{-1}	1.21	50				

^a human epidermoid carcinoma cells; ^b african green monkey kidney epithelial cells; ^c mouse lymphocytic leukemia cells.

6. Conclusions

Annonaceous acetogenins are a relatively new class of polyketides isolated from *Annonaceae* species. Much attention has been paid to their unique chemical structures and attractive biological activities, including antitumor activity. To clarify their mode of action, synthesis of fluorescently or photoaffinity-labeled analogues in progress [99–106]. Acetogenins have offered not only a challenging target for total synthesis, but they are also fascinating lead compounds for the development of novel antitumor agents. Acetogenin analogues possibly play an important role in cancer therapy in the near future.

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