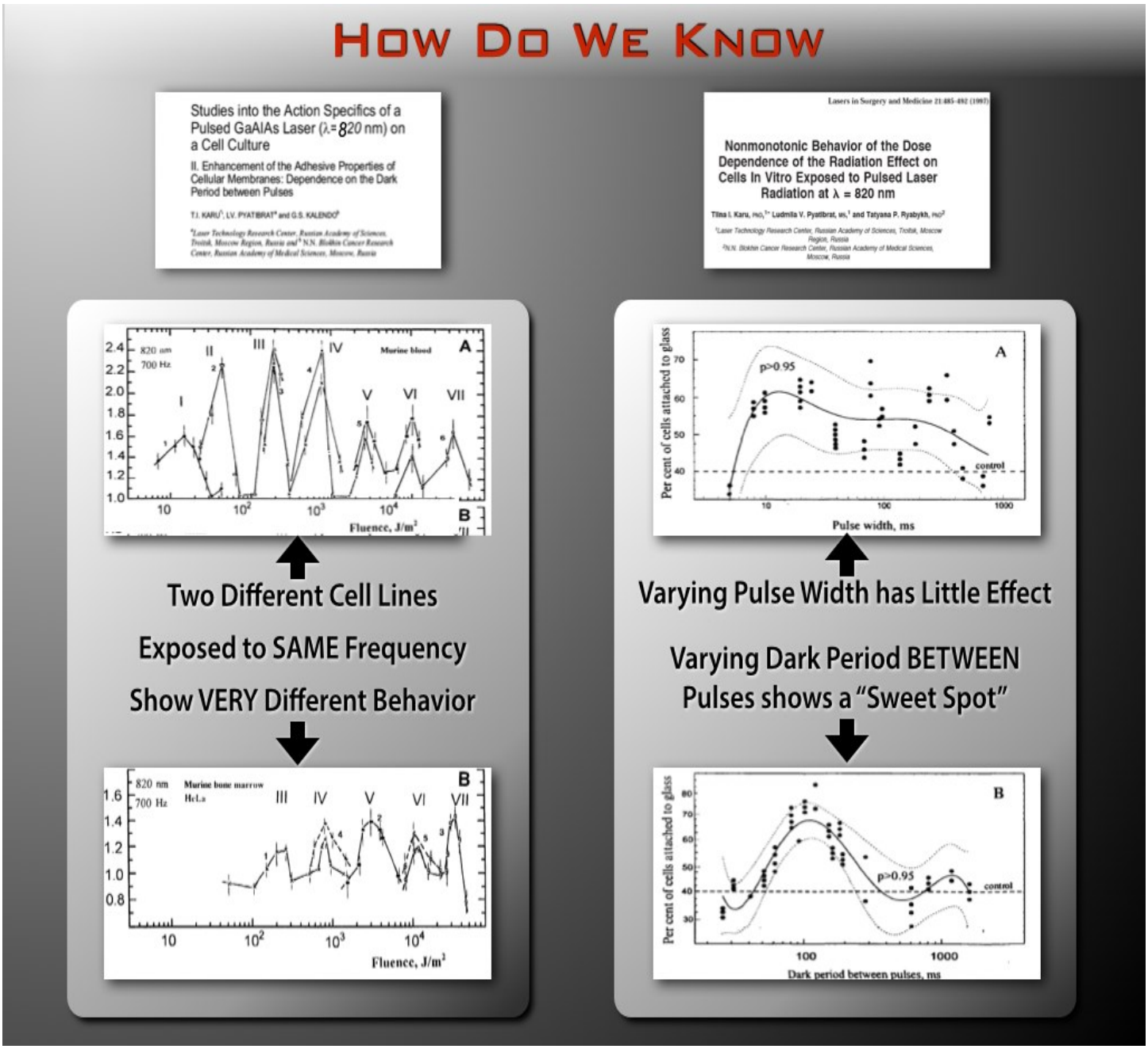

This slide is a graphical illustration of the idea that different cell types respond to different frequencies (and parameters, in general). Not every in vitro study measures "stimulation" by increased proliferation. Some measure adhesion to the glass, others spinning flagellum, others different biochemical secretions. And if you scour all the papers you'll find that the peak of stimulation occurs with different parameter sets. The closest thing to a truly side-by-side analysis is the Karu paper (attached).

Lasers in the Life Sciences, Vol. 9, pp. 211-217
Reprints available directly from the publisher
Photocopying permitted by license only

Studies into the Action Specifics of a Pulsed GaAIAs Laser (λ=*S20* nm) on a Cell Culture

II. Enhancement of the Adhesive Properties of Cellular Membranes: Dependence on the Dark Period between Pulses

T.I. KARU[*]', LV. PYATIBRAT[a] and G.S. KALENDO[b]

[a]*Laser Technology Research Center, Russian Academy of Sciences, Troitsk, Moscow Region, Russia and* [b] N.N. *Blokhin Cancer Research Center, Russian Academy of Medical Sciences, Moscow, Russia*

(Received January 02, 1999; In final form January 26, 1999)

Based on the number of cells attached to glass, changes are studied in the adhesive properties of cellular membranes 30 min. after irradiating a HeLa cell suspension with a pulsed GaAIAs laser (λ. = 820 nm. dose 60 J/m^2. pulse repetition frequency 0.1, 0.2, 0.5, 1.0, 2.5, 10, 50 or 100 Hz, duty factor 5, K), 20, 40, 70 or 95%). It is demonstrated that irradiation causes the number of the cells attached to the glass substrate to increase, but only when the duration of the dark period between pulses is in the range 50-200 ms (maximum increase at 100 ms).

Keywords: Adhesion; dark period between pulses; GaAIAs laser; low-power laser therapy

INTRODUCTION

It is known that the sensitivity of eukaryotic cells to continuous-wave (CW) and pulsed laser radiation of one and the same wavelength and dose may be different (Karu *et al,,* 1996a and b, 1997; Karu 1998). In these