Karyological Study of Marsh Frogs (Rana Ridibunda)

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Abstract: Tailless amphibians, including frogs, the dead are an important part of food chains and networks are in most ecosystems. This special place, further studies are necessary to identify a more complete way to prove this. Currently, few studies in the field survey in Iran biosystematics and tailless amphibian biodiversity has been done. Accordingly, in this research study Karyological a dead frog in the city of Ahvaz - Iran has taken place. Study based on conventional methods on bone marrow tissue was performed in both sexes. Results showed that the chromosome number of this species in the study area has 26 chromosomes. Chromosomes based on arm ratio and the locations of the centromere in the two groups were including seven pairs of chromosomes and 6 pairs of sub metacentric were. Furthermore, based on giemsa staining clearly recognizable sex chromosomes and two sex chromosomes that males Homomorphous XY and XX sex chromosomes in females Homomorphous and had two. Also check the number of chromosomal arms (*Fn*) of this species, 52 showed the arm. [Ashraf Jazayeri. **Karyological Study of Marsh frogs (Rana ridibunda)**. *Life Sci J* 2012;9(3):864-866]. (ISSN: 1097-8135). http://www.lifesciencesite.com. 122

Keywords: *Karyological, Rana ridibunda*

1. Introduction

Tailless amphibians as part of the Food Network, Many important ecosystems are in equilibrium (16). Unfortunately, today marked the global amphibian population been declining rapidly, so these animals are facing extinction (6 and 1 6 and 5). Report Disappeared Be Some Of Species Frogs, Toads AndSalamanders At Areas South, And Center North America, Europe, Asia, Africa And Australia Do The (1 and 5). The first studies in this regard was conducted in 1980 found that about 42 percent of all known amphibians are facing extinction (1 5). The cause of population change and water conditions Earth air, as they are. Among the important factors in this context, Warming and increased $_2$ CO The atmosphere is (15). Amphibian tails due to the outbreak, Karyological diversity issues are appropriate for Cytogenetic Studies (3). Chromosome studies in amphibians began in 1932 when MAKINO There is 22 chromosomes in BUFO SACHALINESIS Using tissues that do divide mitosis described (14). Despite the high phenotypic similarities among species of tailless amphibians very clear methods of identifying species can impose (2) in Iran and other the world, especially on the tail of amphibian species Rana Karyological various studies have been done (12, 9, 11 and 2). But in some cases there is still a shortage (4) In order to accurately identify the species present study examined the chromosomal structure of frog Rana ridibunda is in Ahwaz.

2. Materials and Methods

After collecting samples from the city of Ahvaz, first, and then the solution was carefully weighing kolshicin (mg / ml 1), per gram of body weight of animal, ml 0.01 was injected into the abdominal area.

Table1. Long arm of chromosome 1 frog species (Rana ridibunda) per micrometer

Centro mere of chromosome type	Total length (p + q)	During the long arm (p)	During the short arm (q)	Number of chromosomes
Metacenteric	87.15	86. 9	01. 6	1
Metacenteric	13	32. 8	68. 4	2
Metacenteric	89.11	90. 6	99. 4	3
Metacenteric	82. 9	05. 5	77. 4	4
Metacenteric	73. 8	51. 4	22. 4	5
Metacenteric	30. 6	86. 3	44. 2	6
Submetacentric	19. 5	72. 3	47. 1	7
Submetacentric	21. 4	46. 3	75. 0	8
Submetacentric	82. 3	95. 2	87. 0	9
Submetacentric	59. 3	83. 2	76. 0	10
Submetacentric	48. 2	92. 1	56. 0	11
Submetacentric	20. 2	58. 1	35. 0	12

After 24 h samples, were killed and bone marrow tissue was immediately explained to the Chinese plant contained KCl (0.075 M) was transferred and was maintained for 30 min at room temperature (twice during this period of hypotonic solution KCl Was replaced), then the sample was transferred to a centrifuge tube and 10 minutes away rpm Was centrifuged at 1500. After discharging the supernatant soup, a plate of fresh and cold fixator solution of acetic acid - methanol ratio (1 to 3) was added and then 10 minutes away from the homogenized rpm the second centrifugation step was repeated once again in 1500.

Table 2. Diploid haploid chromosomal number of frogs arm Rana ridibunda

The number of autosomal chromosomes FN [a]	FN	No. Diploid (n 2)	No. Haploi (n)	Type of Chromosome
24	28	14	7	Metacenteric
24	24	12	6	Submetacentric
48	52	26	13	Total

The Sex Chromosome has not been counted

So completely sediment was washed in the end, ml One solution fixation cooled slowly and the drop to the sediment added and by following Pat uniform, then the solution obtained from a distance of 50 cm on the lam clean and cool, it slides right onto the ramp was dry, the color slides stained by Giemsa solution were made, stained slides, labeling and by microscope Optical studies and the best metaphase plates were photographed. After the image of the metaphase plate, on each chromosome Necessary measures such as total length, length of the long arm, short arm length was then the separation and identification of homologous chromosomes, the Karyological was arranged according to standard methods (8).

3. Results

This study details the frog Karyological Rana ridibunda Collected from different areas of Ahvaz, is. On the basis of investigation, chromosome numbers of species detected (Rana ridibunda) As 2n = 26 Was observed (Figure 1 and 2). Identify chromosomes classified according to class rules leevan Is (13) Of these chromosomes, 7 pairs of type Metacenteric and 6 pairs of submetacentric type (Table 1), sex chromosomes were clearly visible and identifiable so in female form. XX , In male form XY The smell Ned, the number of chromosomal arms (FN) 52, the sex chromosomes X Of the total, compared with 3 pairs of chromosomes and sex chromosomes Y The total length of chromosome pair 6 were comparable.]

4. Discussion

Studies worldwide have shown that sex Rana There is a number of chromosomes 26 (10-17). In this study confirmed that the number of chromosome 26 for this species research also is consistent with other researchers.

Existence of sex chromosomes X and Y That sexual differentiation may reflect this species in this study. Was proved, studies of chromosomal markers showed that these chromosomes in the two groups and sub met centric Contract, These results with similar studies in other regions of the world's scientists (7).

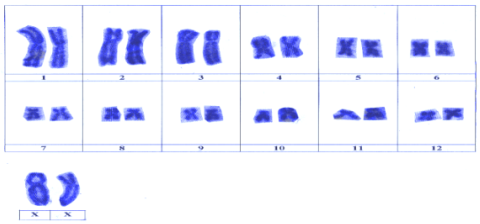

Fig 1. Male metaphase plate Marsh frogs

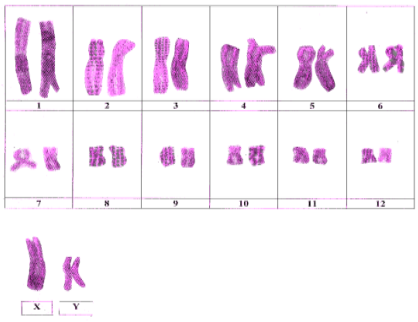

Fig2. Male Karyological Marsh **frogs**

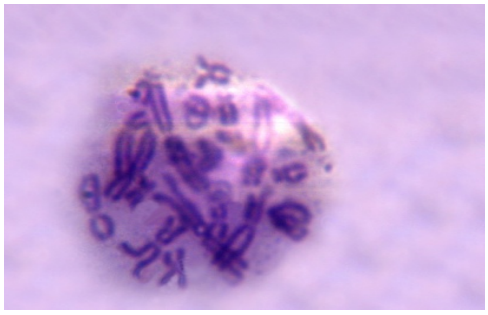

Fig3. A female Marsh frog's metaphase plate

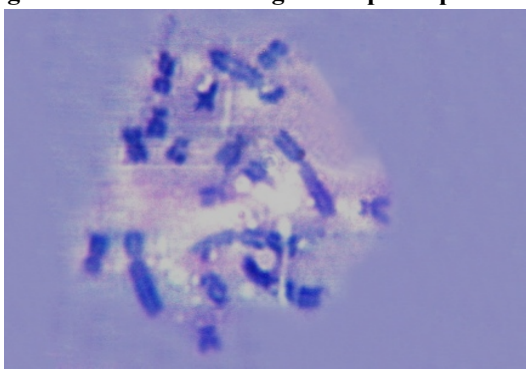

Fig4. Marsh frogs female Karyological

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